Regional Blocs: Promise—or Menace? (page 13)

International Management Digest®

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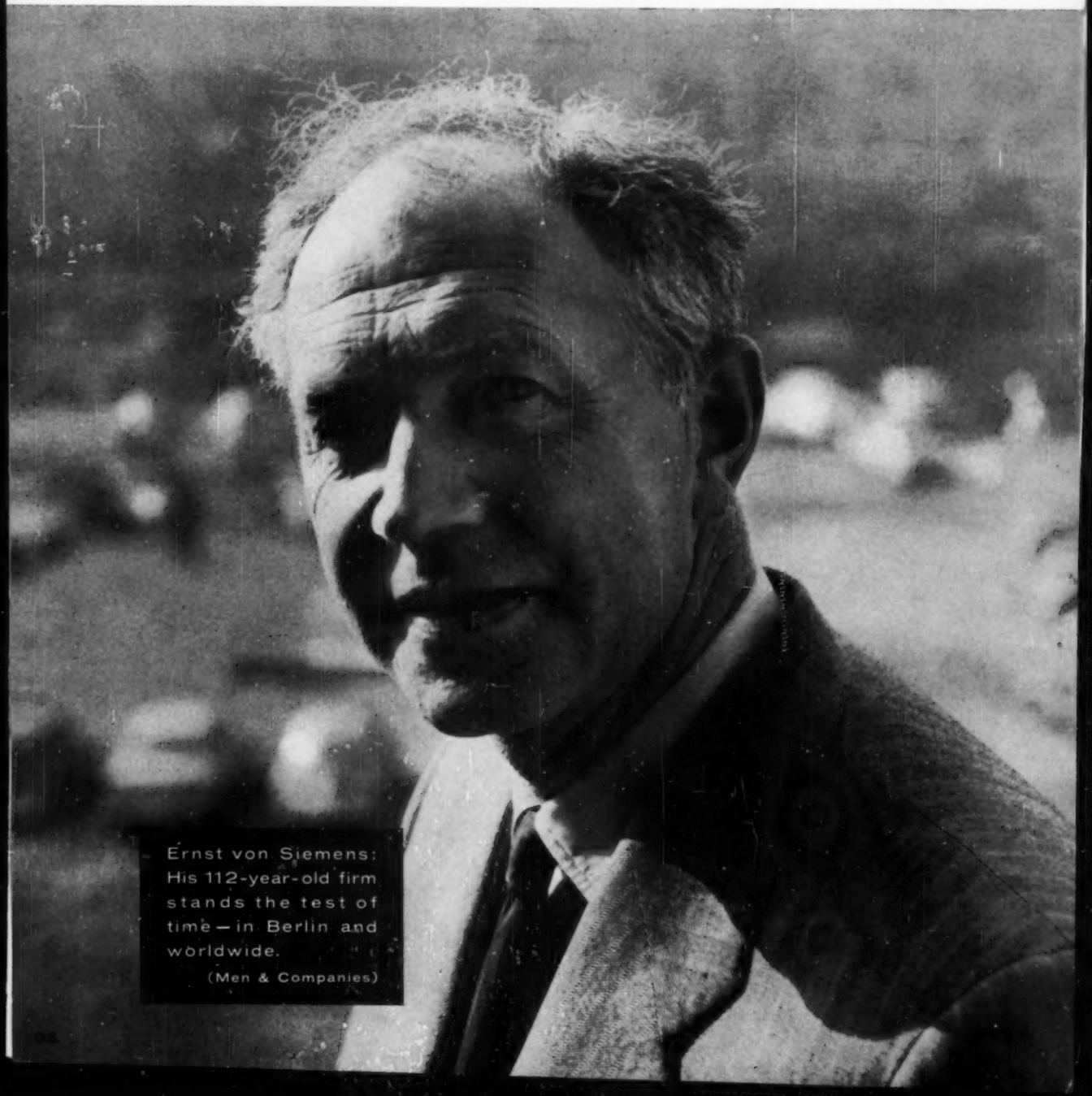
THE McGRAW-HILL PUBLICATION OF WORLD BUSINESS INFORMATION



Ernst von Siemens: His 112-year-old firm stands the test of time—in Berlin and worldwide.
(Men & Companies)

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American Letter

Dear Sir: December, 1959

TOKYO SESSION OUTLINES WORLD TRADE PROBLEMS OF 1960s. The U.S.A. revealed at the recent meeting of the General Agreement on Tariffs & Trade membership just how seriously it views its current balance of payments deficit. Washington genuinely fears a wave of American protectionism unless the deficit is reduced.

U.S. actions to date--tying some development loans, plans for reduced aid and foreign military spending--were taken partly for their psychological impact at home and overseas. They can make but a small dent in the deficit (now at about $4,000-million yearly). The prime hope is for a $2,000-million export rise in 1960. Washington will be satisfied, for the time at least, if the deficit is halved next year.

THE SECOND CRITICAL PROBLEM AHEAD IS TO ENCOURAGE LARGER EXPORTS by the developing countries--without swamping older industrial nations with cheap goods. New, highly-efficient plant and equipment, now being applied in many lower-wage areas, will make them highly competitive in quality products. One suggestion made in Tokyo: Extend the system of so-called "voluntary" quotas such as the U.S. has developed with Japan.

Such quotas do not always work: Look at the case of stainless steel flatware. Japan agreed to limit exports to the U.S. of flatware to 5.5-million dozen. But 8-million came in to U.S. markets via transshipments from Canada, Holland, etc. The best way to police such quotas, keep them from becoming price-fixing cartels, may be to put them under international control organized by GATT.

A THIRD PROBLEM INVOLVES ECONOMIC REGIONALISM (page 13). Europeans reassured Tokyo delegates that the EEC would not become a discriminatory bloc. But many still are not convinced, and worry about the world's rush toward "common-market" thinking.

The outlook for better business in 1960 creates a promising opportunity for progress in solving these problems. Protectionism is harder to justify in good times. Europeans, Japanese, among others, should be able to continue dismantling trade restrictions. And Washington will probably be able to hold the line against U.S. protectionism in 1960 --despite the pressures of an election year.

* * * *

U.S.A. DRIVE TO BECOME MORE COMPETITIVE PICKS UP SPEED: Most American experts agree that the only long-run solution to the payments deficit is increased competitiveness of made-in-U.S. products, in domestic as well as in foreign markets. It is significant that many American businessmen no longer believe higher tariff protection is a solution. Nor do they pin much faith on government export assistance (though some more would help).

Quite a few manufacturers are launching their own programs of adjustment--involving design, production methods, pricing and marketing, all aimed at meeting foreign competition. One recent example: A group of hand-tool makers are using new design, lower-grade steel, heavy automation to turn out new products that have narrowed the price differential with imported items to a few cents. The goods are well-received. (In a future issue, INTERNATIONAL MANAGEMENT will report in detail on this trend in the U.S.)

American Letter

CHANGING WORLD TRADE PATTERN WILL FORCE SHIFTS IN EXPORT FINANCING: Changes are coming in government and private export-financing techniques. Creation of regional trade areas (page 13), intense competition among industrial nations, the "Buy U.S." policy adopted for Development Loan Fund credits, and long-term Russian lending are behind the new planning. British exporters say that a fierce credit war is in the offing unless the five-year limit on government export insurance set by the 1934 Berne Union is erased. They maintain that extended credit is essential if they are to make capital goods sales to less-developed countries.

More generous credit facilities are now regarded as only a matter of time. Developing countries insist capital-goods suppliers must tide them over since raising funds in world financial centers is difficult. The United Kingdom -- which for more than 40 years has set the pattern in export credit insurance -- is thinking seriously about going to 15-year coverage. With the British Export Credits Guarantee Department restricted to five-year terms by law, there is agitation to establish private export finance companies. London's all-important Credit Insurance Association has recommended this step to counter complaints that England's competitors are better served.

Some countries with membership in the Berne Union already have violated the five-year ceiling on financing, resorting to disguised borrowing and maturity dates. Others are creating special organizations free of the Berne Union code. An example: the British Oil Equipment Credits Ltd. (BOEC), which recently granted a $9.8-million long-term credit to Pemex (the Mexican petroleum monopoly). Other large deals are pending with Petrobras of Brazil and elsewhere in Latin America and in the Middle East.

EUROPEANS REGARD THE NEW "BUY AMERICAN" SLANT ON U.S. AID AS DANGEROUS. Some believe it may backfire by encouraging other producers to extend yet more liberal terms in order to hold business. Japan's Export-Import Bank worries many exporters: Seven-to-ten-year credits recently were extended to Latin America, with down payments cut to 20%. But low Soviet interest rates on long-term loans are causing less concern now: Rates often turn out to be pure propaganda since prices are adjusted upward to offset low interest. Meanwhile, West Germany has developed techniques enabling exporters to offer ten-year credits to Chile, Ghana and the United Arab Republic. And the Swiss government has just increased the guarantees it offers banks to cover manufacturers' risks.

One of the most active government export financing agencies is the Canadian Export Credits Insurance Corp., whose recent amendments are certain to encourage capital-goods exporters to seek new business. This year's volume of general commodities insured is up 28% over 1958. For the first time, Canadian businessmen can sell on medium-term credit to overseas importers and still get government guarantees. Australia's Exports Payment Insurance Corp. probably extends the broadest coverage of any public authority --85% protection of any loss arising from default, blockage of funds, transfer difficulties, and other contingencies.

AMERICANS DEMAND EXPORT CREDIT HELP, TOO: In view of the worldwide trend, top U.S. industrialists are again pushing for a private export credit guarantee organization. Twice before bills have been filed in Congress with no result. The plan now is to get Congress to authorize private corporations to borrow from U.S. Treasury. Supporters of move say recent increased participation by Export-Import Bank in financing overseas shipments did not go far enough.

GROWTH INDUSTRIES CONTINUE TO RUN TRUE TO FORM: A look at past records and future plans indicates that the "glamour" industries of the past few years will continue their expansive ways into the 1960s. Ten major U.S. industries now show an estimated growth of 100% or more over the next decade-- and the growth potential of these industries in many other nations will probably be even larger.

The "top ten" growth prospects of 50 U.S. industries are aluminum, drugs, electronics, missiles, plastics, air transport, electrical energy, office machinery, housing, and natural gas (note all but two are heavily involved in international business). Their estimated output volume for 1960 will be up 35% compared to 1957. Contrast that with an estimated 14% for all U.S. production. And the top ten's capital spending plans for 1960 are 18% above the 1957 peak, while those for all manufacturing are 15% below.

These industries have their problems (such as aluminum's overcapacity or air transport's mounting costs). And in some cases investors may have discounted future earnings too far ahead. Yet everything suggests their high growth pattern will continue.

* * * *

MORE OPPORTUNITIES IN THE ARTS-AND-CRAFTS TRADE: World consumers' growing tastes for novel imports (page 15) provide greater opportunity for handcraft trade--provided production and marketing can be efficiently organized. Look at the problem of the anthropologists who run Mexico's National Museum of Popular Arts and Crafts.

Almost by accident, they are struggling with over $1-million in orders from U.S., Japanese, European department stores, decorators, and others for metal, glass, and woven trinkets. It delights the government, anxious to improve the lot of its rural Indian population. But the scientists have had great difficulty organizing the first 500,000 cottage workers for production and prompt delivery.

It all started when Schenley International of the U.S.A. helped the non-profit Museum make a study of handcrafts, then placed an order for $300,000 worth of woven palm frond novelties for promotion materials in U.S. bars and restaurants. Now Schenley wants more--and so do many others. The Museum has gotten the government's Banco Nacional de Comercio Exterior to help as business agent and representative abroad.

NEW PRODUCTS: A rubber-like film, derived from polyurethane plastic, appears three to five times stronger than other films. Called Estane VC, it is unaffected by air, gases, petroleum, low temperatures, and is abrasion- and tear-resistant. One possible use: Tough, flexible, sack-like fuel tanks for automobiles. For details: B.F. Goodrich Industrial Products Co., Akron, Ohio.

Auto tires with removable treads are on the market, promising greater safety, economy--and profits in an exploding world market for retreading and recapping tires. The treads consist of three wire-reinforced rubber rings, placed on a smooth surface tire when it is deflated. Pirelli SpA, Milan, Italy.

An electronic "production and costing center" consists of signal boxes at each major station in a plant, connected to a central control desk. Hours worked, units produced, maintenance and materials-flow problems are recorded centrally, decisions taken immediately. Zuse KG, Hersfeld, Germany.

Nuclear Note: Vitro Corp. of America (New York) has a package reactor that it believes can produce process steam competitively with fossil fuel plants.

For more New Products, see Product Digest on another page of this issue.

FOREIGN TRADERS CAN COUNT ON LOW CARGO RATES DURING 1960: Rising world trade will not bring any sustained increase in shipping rates. That is because available dry-cargo tonnage is more than ample; and new ships afloat or on the ways will force scrapping of less economical vessels. It may be another three years before there is any semblance of balance in supply and demand. The same is true for tankers: Growth in world oil consumption will not be enough in the forseeable future to raise tanker rates, and the petroleum carriers will continue to compete with dry-cargo ships for North American-European grain trade. Note: The U.S. Congress will try to legislate, and more strictly enforce, stiff preferential rates for American ships.

World airlines are seeking a larger share of international cargo through drastic rate reductions. Subject to approval by governments, substantial cuts will be made next April for transatlantic shipment of foodstuffs, auto parts, textiles, to name a few. Already, big reductions have been approved for U.S.-North and Central Pacific air cargo. A 10,000 kilo shipment, California to Tokyo, can go for 50% less--thanks to a new system which establishes only one rate for all types of goods within a weight class. Airline people say that if this system is applied on the Atlantic, cargo business there could be quadrupled in a few years.

Airlines are rushing to convert big propeller-driven craft for all-cargo use. And in another year they will have even larger planes to carry more at less cost.

* * * *

A QUICK REVIEW OF EXCHANGE, CREDIT, AND BUSINESS CONDITIONS

Country	Exchange Rate (units per $1, New York)			Government Reserves (gold & foreign exchange, millions)		Dollars in U.S. Banks	Conversion Delays / Collection Experience		Business Conditions
	6 Nov. 1959		6 Oct. 1959	latest month	year ago	(Millions)			
Argentina	82.00	Peso	80.65	$ 212.1	$ 177.0	$ 245.0	3 Mos.	Fair-Good	Fair
Australia	• 2.23	Pound	• 2.23	1,157.0	1,128.0	85.0	None	Very Good	Good
Austria	25.65	Schilling	25.65	756.0	632.0	391.0	None	Good	Good
Belgium	50.25	Franc	50.25	1,405.0	1,460.0	119.0	None	Very Good	Improving
Bolivia	12,000.00	Boliviano	12,000.00	2.4	2.4	19.5	4 Mos.	Poor-Fair	Poor
Brazil	182.00	Cruzeiro	167.00	440.0	455.0	162.0	3 Mos.	Good	Fair
Canada	.9456	Dollar	.95	1,947.0	1,937.0	2,095.0	None	Very Good	Good
Chile	1,100.00	Peso	1,100.00	149.0	49.9	144.3	2 Mos.	Good	Improving
Colombia	6.78	Peso	6.67	334.0	155.9	209.0	2 Mos.	Good	Improving
Costa Rica	6.67	Colon	6.67	22.4	17.0	24.5	1 Mo.	Good	Fair
Cuba	1.25	Peso	1.25	313.0	380.0	206.0	2 Mos.	Fair	Deteriorating
Denmark	6.80	Krone	6.80	288.9	219.8	98.2	None	Good	Good
Dom. Rep.	1.00	Peso	1.00	40.0	45.2	39.6	1 Mo.	Fair-Good	Deteriorating
Ecuador	16.67	Sucre	16.67	36.0	35.3	17.4	1 Mo.	Fair-Good	Improving
El Salvador	2.50	Colon	2.50	34.7	36.8	29.1	1 Mo.	Fair-Good	Improving
Finland	351.00	Markka	345.00	295.2	264.9	75.6	None	Good	Improving
France	492.50	Franc	492.50	1,875.0	985.0	1,139.0	None	Good	Good
Germany	4.1750	D-Mark	4.1750	5,324.0	6,225.0	1,391.0	None	Very Good	Good
Greece	29.41	Drachma	29.41	198.0	198.0	165.2	1 Mo.	Fair-Good	Improving
Guatemala	1.01	Quetzal	1.01	48.1	50.5	36.9	1 Mo.	Good	Deteriorating
Honduras	2.00	Lempira	2.00	16.4	8.3	6.3	1 Mo.	Good	Fair
India	6.25	Rupee	5.71	627.0	626.0	103.0	1 Mo.	Good	Fair
Indonesia	200.00	Rupiah	200.00	249.0	191.0	92.0	3 Mos.	#L/C Basis	Deteriorating
Iran	76.92	Rial	76.92	226.0	276.0	28.0	3 Mos.	Fair-Good	Fair
Iraq	• 2.70	Dinar	• 2.70	339.2	300.6	18.0	2 Mos.	#L/C Basis	Deteriorating
Israel	2.50	Pound	2.38	134.7	85.4	94.4	1 Mo.	#L/C Basis	Improving
Italy	621.00	Lira	617.00	2,829.0	2,139.0	1,562.0	None	Good	Good
Japan	400.00	Yen	397.00	939.0	939.0	1,106.0	1 Mo.	Good	Good
Mexico	12.35	Peso	12.35	413.0	396.0	416.0	None	Good	Good
Netherlands	3.77	Guilder	3.77	1,382.0	1,398.0	423.0	None	Good	Good
New Zealand	• 2.63	Pound	• 2.63	270.0	182.0	7.0	None	Very Good	Improving
Nicaragua	8.00	Cordoba	8.00	13.6	7.3	11.3	None	Very Good	Fair-Good
Norway	7.14	Krone	7.14	234.0	229.1	102.0	None	Good	Improving
Pakistan	6.67	Rupee	7.14	188.0	156.0	6.0	2 Mos.	Fair-Good	Improving
Panama	1.00	Balboa	1.00	45.7	48.0	155.0	None	Very Good	Fair
Peru	27.40	Sol	28.17	47.4	32.4	80.6	2 Mos.	Good	Improving
Philippines	3.57	Peso	3.57	78.0	58.0	184.0	1 Mo.	#Fair	Poor-Fair
Portugal	28.17	Escudo	27.77	734.0	700.0	155.0	1 Mo.	Good	Fair
South Africa	• 2.76	Pound	• 2.76	369.0	279.0	53.0	None	Very Good	Good
Spain	60.60	Peseta	60.60	57.0	57.0	59.0	None	#L/C Basis	Improving
Sweden	5.17	Krona	5.17	482.0	471.0	343.0	None	Good	Good
Switzerland	4.34	Franc	4.32	1,995.0	2,021.0	867.0	None	Very Good	Good
Turkey	12.50	Pound	12.90	274.0	275.0	29.0	12 Mos.	#Poor	Poor-Fair
U. A. R.	• 2.00	Pound	• 2.00	382.0	409.0	16.0	3 Mos.	#L/C Basis	Poor-Fair
U. K.	• 2.8050	Pound	• 2.8050	3,038.0	3,207.0	1,093.0	None	Very Good	Good
Uruguay	10.53	Peso	10.53	180.0	180.0	85.0	None	#Fair	Improving
Venezuela	3.34	Bolivar	3.34	1,041.0	1,075.0	428.0	1 Mo.	Good	Improving

•U.S. Dollars per Pound #Most Exports by Letter of Credit

The Editors

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More "big loader" features than anything in its field

TL-14

2,400 kg (5,300-lb) carry capacity
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The Allis-Chalmers TL-14 Tractoloader offers more "big loader" features than anything in the medium-size loader field. These extra advantages mean increased performance, at low cost, on public construction, maintenance and material handling projects.

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Another "big loader" advantage is the TL-14's pin-connected axles which resist tendencies to shift and roll under load. These axles are connected directly to the frame by 5 cm (2-in) diameter steel pins . . . not by simple U-bolt connections. With a TL-14, there are no warped plates, bent and loosened bolts so common on all other loaders.

Furthermore, the TL-14 offers the Allis-Chalmers family of buckets. You select any one of six buckets that best meets the TL-14's 2,400 kg (5,300-lb) carry capacity. Choose the correct bucket based on weight of material handled, and the working conditions under which the machine will operate.

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Tractoloaders are products of Allis-Chalmers' Deerfield, (Illinois) Works, formerly Tractomotive Corporation.

DECEMBER 1959

VOLUME 14 NUMBER 12

International Management Digest.

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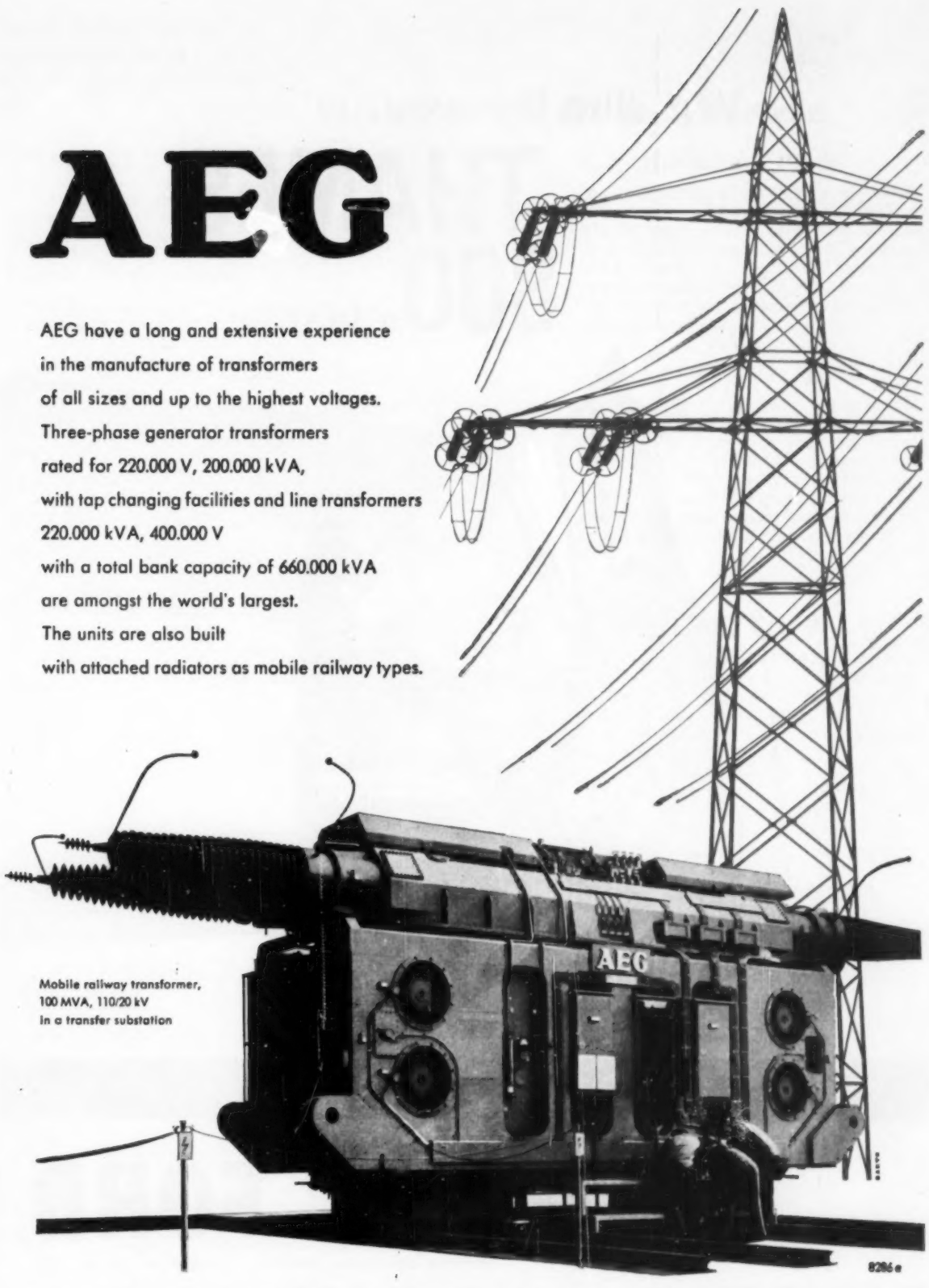

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100 MVA, 110/20 kV
in a transfer substation

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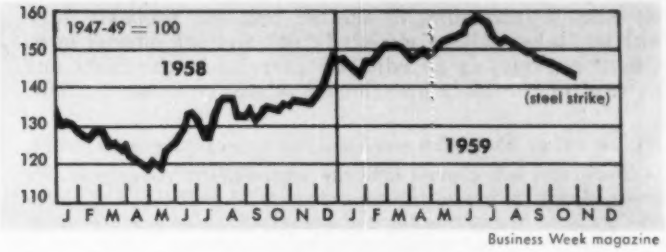
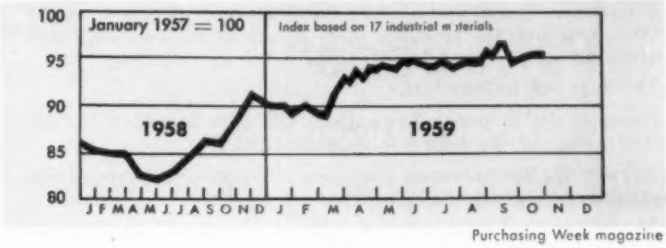
Business at a Glance



Business Week magazine



Purchasing Week magazine

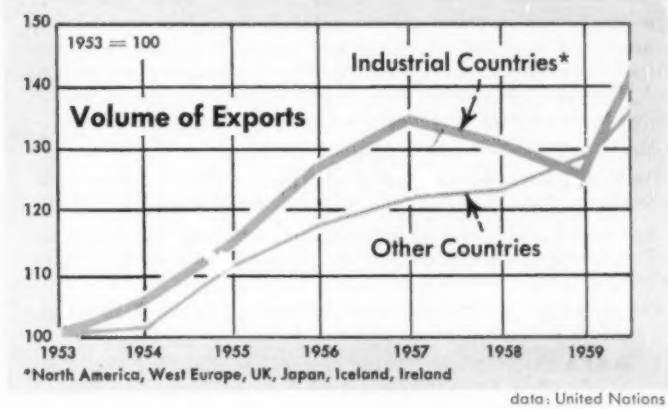
U.S. Business Trend

The steel strike affected every sector of U.S. metal-consuming industry—and it will be many weeks before damage to production schedules is repaired. The situation virtually assures a rush of inventory building, capital spending, consumer buying, in early 1960. A good omen: The new autos are well received.

U.S. Commodity Trend

Strikes, fast-improving business in Europe and Japan, surpluses, such varied influences as Russian buying and Latin American politics confuse commodities. But the net effect of all the factors is an upward pressure on prices of sensitive materials—such as nonferrous metals (copper, zinc), scrap steel, rubber.

CHARTS OF THE MONTH

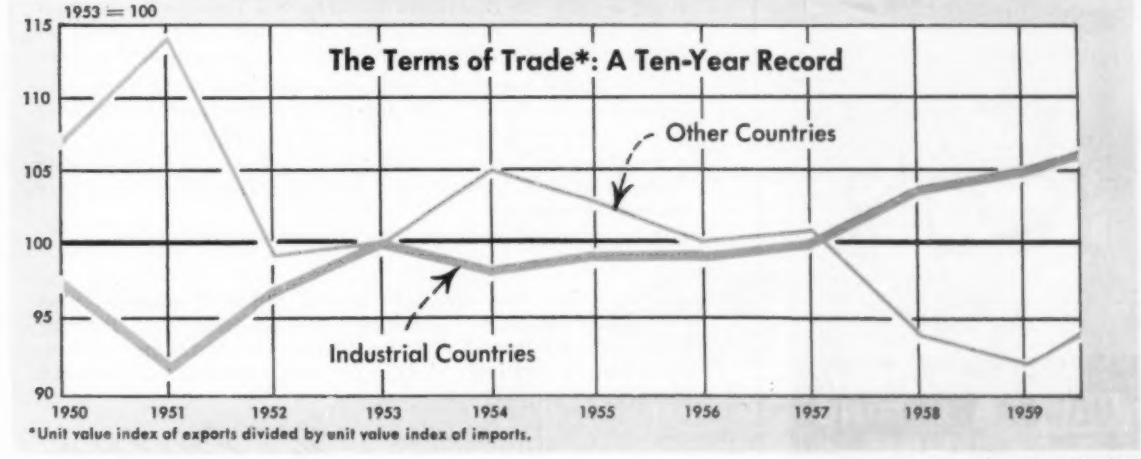


data: United Nations

World Trade Trends

The volume of world trade is making a strong improvement—which should carry on into 1960. The chart at left shows the trend—a healthier one both for "industrial" countries and for those that depend heavily on raw materials exports.

Yet the "terms of trade"—prices of a nation's exports compared to those it must pay for imports—still plague materials producers. The chart below shows how they benefited during the Korean War ('50-'51) and during the '53-'55 boom. Since then the industrial countries have had the better of it—and so far their price advantage shows few signs of abating.



data: United Nations

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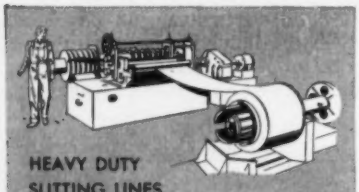
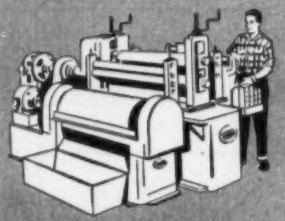

HEAVY DUTY
SLITTING LINES


SCRAP CHOPPERS

YODER ROTARY SLITTING LINES

Things to Come . . .

The following predictions of Things to Come are *not* to be checked 12 months from now for their accuracy. In fact, they should (according to the old proverb, probably Russian) be "taken with a grain of salt" and are offered here, without apology, as an editorial exercise in the facts and foibles of life in the international business community, 1960.

★ *There will be 50-million more mouths to feed 12 months hence.*

★ *A European will charge that the materialistic Americans are concerned only with new autos and household gadgets. The Europeans' rush to buy new autos and household gadgets will provide one of history's great materialistic manifestations.*

★ *Elections in Brazil will confuse the Brazilians. Elections in the U.S.A. will confuse everyone else. Elections in the USSR will confuse no one.*

★ *The wine will be excellent.*

★ *Business will be good. The experts will have to put off the expected arrival of the next recession until* 1961.

★ *At least* 500,000 *corporate managers will peer into a mirror and begin worrying about their Corporate Image.*

★ *The Swiss banker who bet that the dollar would be devalued will have to wait. South Africans will wait with him.*

★ *Interest rates and milady's hemlines will tend to rise.*

★ *Americans will charge that cheap European labor is ruining their markets. Europeans will charge that cheap Japanese labor is ruining their markets. Japanese will charge that cheap Communist labor is ruining their markets. The Communists will charge that American, European, and Japanese labor is ruinously exploited by the bosses, and, besides, Communist labor is happier.*

★ *Almost everyone will have a Japanese transistor radio.*

★ *Paris will have the greatest traffic jam in history. Rome will have the greatest hotel jam in history. London will have both.*

★ *Americans will spend* $2,500-*million (including tips) visiting foreign lands, and will appear to be outnumbered only by touring Chinese acrobatic teams.*

★ *The man who can find a market for unused plastic Hula Hoops will make a great deal of money.*

★ *At least* 5,000 *people will make speeches saying that The Marketing Concept is management's answer to problems of* 1960.

★ *It is extremely unlikely that either Taiwan, Hong Kong, the Tadzhik SSR, the Dominican Republic, the Panama Canal, West Irian, Northern Ireland, East and West Berlin, Texas, Tibet, or Latvia will be liberated in* 1960. *But Nigeria will be liberated.*

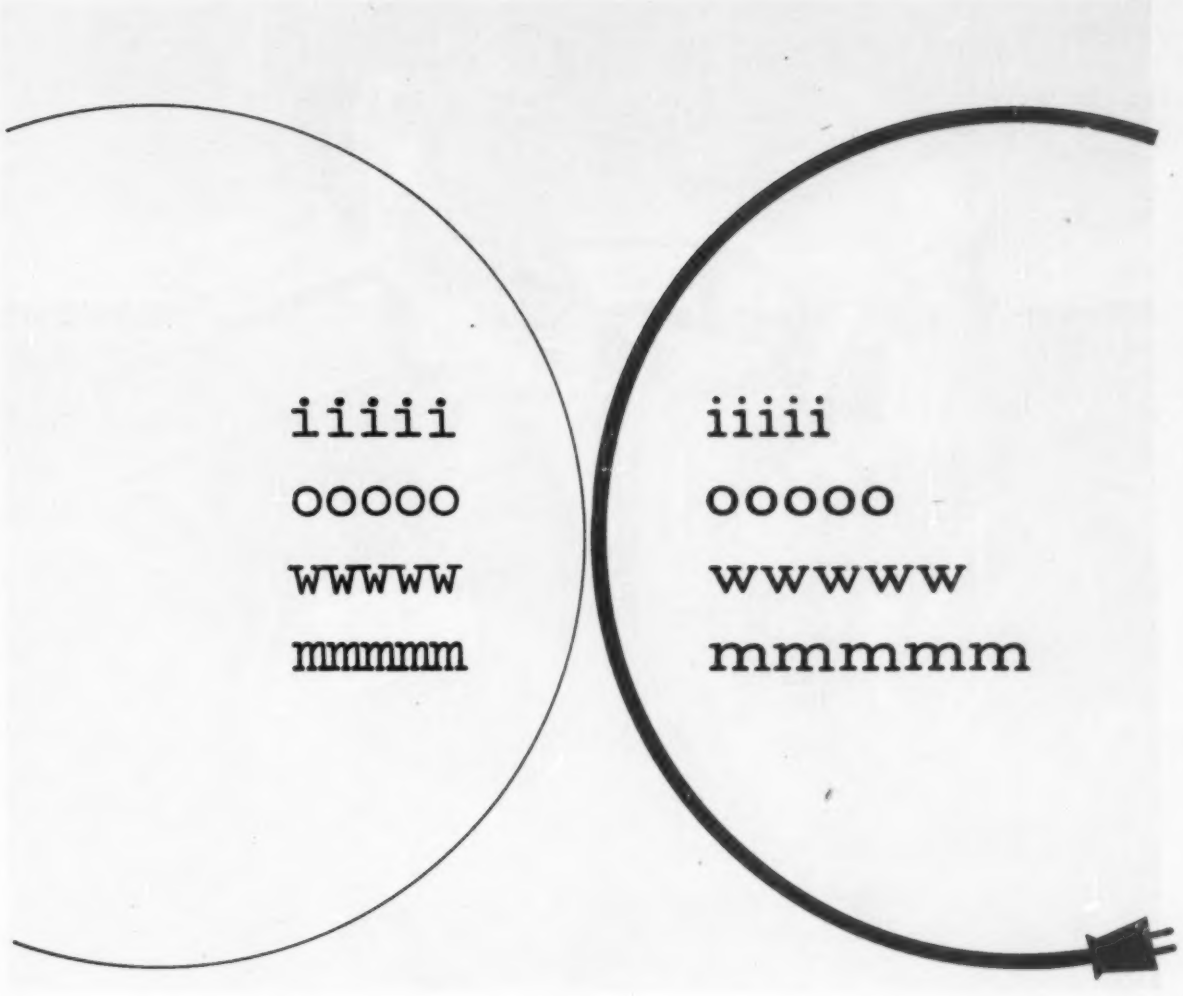
★ *Some Latin Americans will accuse the U.S.A. of neglecting Latin America. Other Latin Americans will accuse the U.S.A. of intervening in Latin America. The U.S.A. will send money.*

★ *The American will drink* 144,570,000,000 *cups of coffee in* 1960 *(note the extra* 395,000,000 *cups because of Leap Year). But that will not be enough.*

★ *Neither BB nor VW will announce basic model changes.*

It all looks like another case of "plus ca change, plus c'est la meme chose" (another Russian proverb). But we believe that for each step backward, the world has an unparalleled opportunity to take two steps forward toward the abolition of poverty and war.

The Editors



which typing, in your opinion, is easier to read?

What you see above is the difference between ordinary typing and typing with proportional lettering turned out on an IBM "Executive" Electric Typewriter. As shown on the left, typewriters without proportional lettering cram each letter into exactly the same space, ignoring the fact that almost every character is naturally of a different proportion from every other. Result? A visual sameness that tires the eye. On the other hand, the IBM "Executive" Electric Typewriter with proportional lettering allows each character to have its own natural space—wider for an "m," for instance, than for a slender "i." Result? Beautiful typing that pleases the eye, is easier and faster to read. Why not have your secretary contact the local IBM representative for a complete demonstration?

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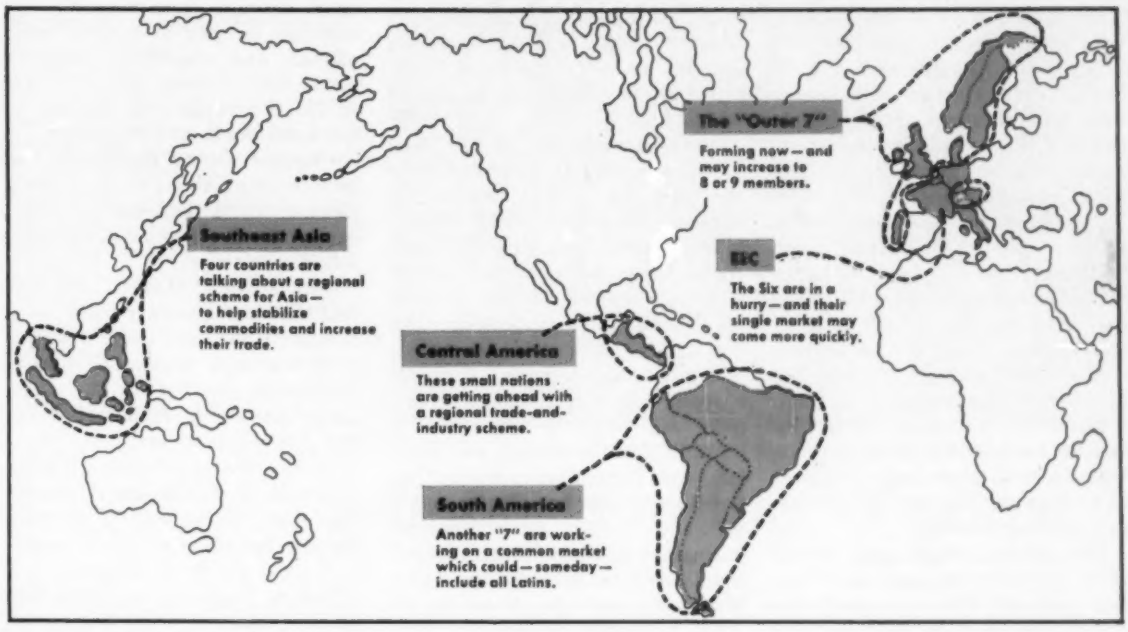

The "Outer 7"
Forming now — and may increase to 8 or 9 members.
Southeast Asia
Four countries are talking about a regional scheme for Asia — to help stabilize commodities and increase their trade.
EEC
The Six are in a hurry — and their single market may come more quickly.
Central America
These small nations are getting ahead with a regional trade-and-industry scheme.
South America
Another "7" are working on a common market which could — someday — include all Latins.

A Rush Toward Regionalism

For better or worse, the "common market" idea is sweeping the world. In the 1960s, businessmen must begin to think in regional terms.

INTERNATIONAL TRADE — $200,000-million worth of exports and imports each year—is suffering growing pains. Indeed, the map suggests that it has grown so large it threatens to split into a patchwork of isolated and competitive pieces.

This would be a far cry from the dreams of the statesmen who, after World War II, held out hope for expanding commerce in which every nation participated fully and freely. To some men, the patchwork puzzle above seems to have a menacing air.

Whether menacing or promising, common markets, customs unions, free trade areas—call them "economic regionalism"—provide a critical issue for the decade ahead. A year ago the European Economic Community set the pattern. Now the regional idea is catching hold in all parts of the world, carrying with it a new sense of urgency.

Besides the six-nation EEC, these blocs are now appearing:

—**The "Outer Seven"** free trade associates, who plan to reduce restrictions among themselves but retain individual tariffs against outsiders, will be functioning by July. Members: Britain, Sweden, Norway, Denmark, Portugal, Austria, Switzerland—and maybe more.

—**Five Central American** states, who ratified a regional treaty this year, hope to negotiate tariff reductions in 1960, and begin their move to free trade in 1961. Members: Guatemala, El Salvador, Costa Rica, Honduras, Nicaragua.

—**A South American Common Market** of seven states comes up for approval in a few months, with a starting goal a year or two later (IMD, Nov. p1).

This plan faces severe problems, and it might have to begin as a limited agreement between two or three nations, then spread to neighbors. Eventually, it could link up with Central America, Colombia, Venezuela, even Mexico. Members: Argentina, Bolivia, Brazil, Chile, Paraguay, Peru, Uruguay.

I. On the Horizon

Dim outlines of other regional schemes are visible. A few months ago, the Malayans, Indonesians, Filipinos, and Thais began informal talks aimed at Southeast Asian cooperation—to help solve common commodity problems, possibly to lay the groundwork for freer trade.

Meanwhile, leaders of newly-independent African states are exploring regional possibilities. Ghana, Guinea, Sudan, Senegal, Nigeria (to become independent in 1960), even Tunisia and Morocco are candidates. In the Middle East many thoughtful Arabs see future strength in economic union.

• **U.S., Too**—Even in powerful

". . . regionalism is a two-edged sword. It could speed freer trade. Or it could lead the world back to isolation . . ."

REGIONALISM starts on p13

trading nations who have so far held aloof from regionalism, the idea is finding supporters. A small but influential group of businessmen and government officials in the U. S. A. are quietly urging another look at proposals to join with Canada, perhaps with Mexico, in regional trade arrangements. Others talk of the scheme for an "Atlantic Free Trade Area" as a bridge to Europe. Japan also wonders if it could somehow link up with South Asia, even with Europe.

And there is the most rigid bloc of all—the Communist countries. While they talk about vastly increased trade with non-Communists their internal plans seem designed to further tighten the Sino-Soviet-East Europe autarky.

This means, simply, that Soviet plans to raise consumer good output may call for temporarily increased purchases of Western plant and equipment. It also means that when an East European nation is reorganizing its production, it may sell more unwanted goods to non-Communist nations. But the eventual aim of current Communist planning is more self-sufficiency, not less, for the entire bloc.

II. Schemes & Dreams

A far less imposing array of plans and dreams would be enough to raise the question: What does regionalism mean to the established theories of multilateral trade, which call for gradual elimination of all restrictions through the General Agreement on Tariffs & Trade (GATT)?

Admittedly, many of the regional schemes are embryonic; some may be visionary; some may never hurdle the nationalistic obstacles in their way.

It is one thing for the continental Europeans—contiguous, with common cultural ties, and at a high stage of industrial and political sophistication—to cast their lot together. They can afford the adjustments, the competition. It is far more difficult for less-developed nations, struggling to build industry, plagued by political and economic instability, to do the same thing.

Yet regionalism is clearly an idea whose time has come.

• **Self-generating** — Regional blocs reproduce themselves. Thus the Common Market of the Six spawned the unsuccessful British plan for an all-Europe Free Trade Area, then the substitute Outer Seven. Europe's moves directly stimulated the Latin Americans, —and the Asians and Africans.

Regionalism is more than an economic phenomenon—the European Six owes its existence to political considerations. Regionalism tends to modify traditional nationalism; hopes for a better political and social status become intimately entwined with economic goals. Add to this mix the East-West split and the desire to be "neutral," and regionalism becomes even more appealing.

So far so good. Strong regional blocs can encourage liberalization and expansion of world business. By providing scope for mass production, mass marketing, more efficient investment, each regional whole can become greater than the sum of its separate national parts.

No one doubts that this is possible under ideal circumstances. But regionalism is a two-edged sword. It could speed freer trade. Or it could lead the world back to tighter, if larger, islands of isolation.

III. The Testing Time

Next year will begin the crucial testing period for regionalism—and Europe will be the testing ground. A year from now, the European Six will sit down to begin negotiating their group's external tariffs and quotas with non-members.

By then, the European trading nations either will have closed ranks or split further apart. The last few months have seen many official and unofficial gestures about ways to heal the split. Yet so far the Seven and the Six do not seem ready to compromise.

• **Merger**—Many Europeans, led by Germany's redoubtable Ludwig Erhard, insist that eventual merger of the two groups is the only possible solution.

Outsiders tend to agree. But they fear that such a merger could easily compound the restrictive features of both groups, erecting even more formidable barriers to the U. S., Latin American, Japanese, Asian and African suppliers.

An alternative solution might be a move by the Six to drastically reduce barriers to outside traders, possibly including all GATT members under the most-favored-nation principle. There is speculation that several leaders of the Six would like to present such a dramatic offer in 1960.

The idea appeals to some in the EEC because it would immediately remove the Outer Seven's reason for existence, and leave the Six to move toward political and industrial integration. But skeptics argue that protectionist pressure within the group will prevent such an initiative for quite a while.

There is another drawback to this idea, at least as far as the U. S. A. is concerned. A wholesale offer to scrap trade restrictions in Europe probably would leave the U. S. negotiators without the power to match it in kind. Washington's limit on tariff reductions is set at 20% by the Trade Agreements Law; if the Europeans offered more, the U. S. could not meet it.

• **Piecemeal**—A third alternative appears to many trade experts as the likeliest solution. This is the chance that both the Six and the Seven will seek to make deals with all their trading partners on specific terms tailored to the individual needs of each.

This would mean, for example, that the Six would make special concessions to nations like Greece,

Next Month . . .

. . . INTERNATIONAL MANAGEMENT will present a country-by-country report on 1960 business in its American Letter pages. And the editors are preparing, for the same issue, a special forecast for the decade ahead, to include U.S. and world economic trends, and the outlook for technology, management, and marketing in the Sixties.

Turkey, Austria, Switzerland—all essential trading partners. Then such a formula would be applied to other European and non-European trading partners. The formula could be adopted by both the Six and the Seven, or by individual members or combinations of members of each group.

This piecemeal approach would solve many problems. But it could mean a further drift away from multilateral trade. For however much such trade agreements were designed to reduce barriers, adoption of such ad hoc policies could weave an intricate web of protectionism. GATT principles would be undermined, and most-favored-nation trading would become almost impossible.

IV. Battle for GATT

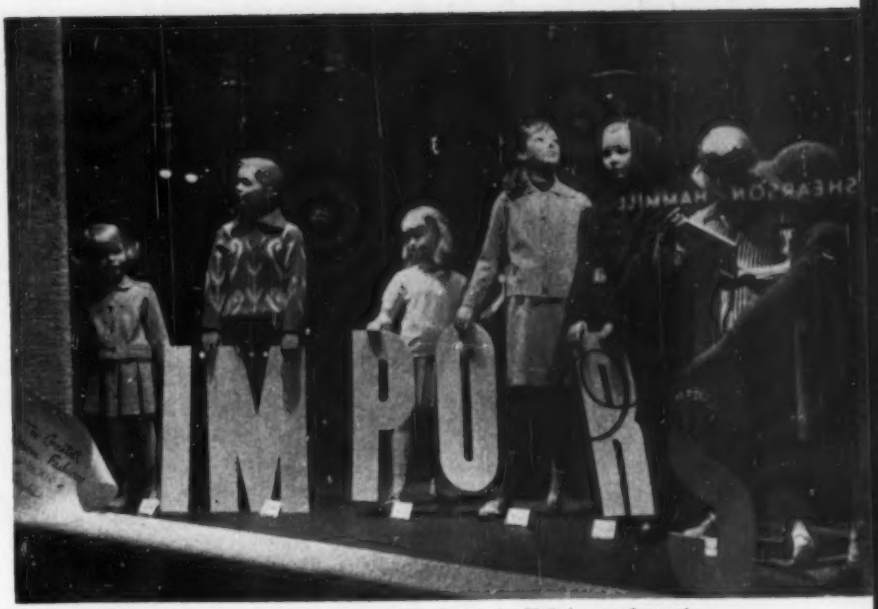
The prospect of such labyrinthine turns in world trade relations horrifies many economists as well as many businessmen who have to make decisions on how to trade, where to invest, what to produce. To avoid such a situation, a powerful attempt will be made in 1960 to hold the line for multilateral trade.

The U. S. A. and Japan will lead the fight to save GATT (this was already apparent at the recent GATT meeting in Tokyo—see page 1). They will get strong support from parts of Latin America, Asia, Africa, and from many Europeans. And, ironically, the U. S. A.'s strongest lead may come from a weakness. An American official sums it up this way:

"If our balance of payments deficit is anywhere near as large next year as it is now, we can reasonably argue that we are not pressing for multilateralism just for our own profit. We can argue for a very real, worldwide need."

• **U. S. Protectionism**—His unspoken reason is, of course, that without substantial further relaxation of barriers against U. S. exports, Washington may not be able to halt the rising tide of protectionism within the U. S. A. itself.

And to businessmen and governments everywhere, the prospect of the world's largest consumer and importer turning toward economic isolation is the most menacing possibility of all. ●



THIS CHRISTMAS, department stores throughout the U.S.A. are featuring . . .

Imports in the Window

THIS MONTH U. S. consumers are filling their Christmas gift list with the widest assortment of imported items in history. And one reason for increasing sales of foreign goods is the recent big promotion campaigns staged by leading department stores around the country.

In New York, you have Lord & Taylor's "Fashion International" and B. Altman's "Fete Francaise;" in Dallas, Nieman-Marcus had a Latin American festival; in Cleveland, Halle Brothers opened a Parisian cafe, complete with gendarme.

Such colorful promotions (picture above) point up a significant trend: The volume of foreign merchandise sold by U. S. department stores, mail order concerns and specialty houses is rising sharply. During the first half of 1959, U. S. imports of consumer items (excluding food) showed a 47% increase over the same period in 1958.

• **Survey**—According to a recent survey by the *Wall Street Journal*, imports are now being featured by retailers who have done little or no importing in the past.

Such firms as Montgomery Ward, Aldens, Marshall Field, Sears, Roebuck have not only increased their imports, but are sending more buyers abroad and establishing a chain of overseas buying offices. Sears, Roebuck says the value of its imported items will run some $40-million this year, up about 15% from two years ago. Marshall Field & Co., the Chicago-based chain, states that its imports are running about 20% ahead of last year.

A major reason why U. S. retailers are showing increased interest in imports is that they are usually cheaper than domestic products. The merchants say if they do not handle the cheaper foreign merchandise, they are likely to find their customers shopping elsewhere. Also, the novelty and style of many foreign goods appeals.

• **Marketing** — Vast changes in foreign industrial development and marketing techniques are other factors that have encouraged imports, reports the *Journal* survey. Growing willingness to adapt products to the peculiarities of the U. S. market has also resulted in more practical offerings. Italian dress manufacturers are now cutting dresses to fit the American girl's slimmer figure; in Japan, American men's fashions and sizes are being studied in order to meet the demand for imported suits.

Retailers believe that another big factor in soaring sales of imports is the growing number of traveling Americans that have seen and bought goods overseas—and want more of the same. ●

Investors Look At . . .

1. British Stock Markets

THE LONDON STOCK EXCHANGE has come into its own as one of the most important—and now, most interesting—capital markets. Investors in many countries are taking a new, searching look at British equities.

The trend has grown right along with Britain's improving business outlook over the past year (IMD, Sept, p 11). Then the Conservative victory in the October elections swept away investor fears of nationalization and other policies that would not be "good for business." All this has stimulated glowing predictions for British equity stocks.

There is a negative aspect to London's appeal, of course. Many international investors have become disenchanted with Wall Street's near-term prospects (IMD, Nov). And there has been some concern with high prices on European markets. Of all the major exchanges, London seems to offer the best bargains—temporarily, at least.

• **Great Expectations**—The British economy is in the delicious throes of a consumption boom. Most observers see good prospects for shares of companies close to the consumer; a sharp rise in earnings and dividends is expected (capital goods shares are not now preferred by investors, but their time could come later). And despite the recent bidding-up of prices, London yields are still attractive by U. S. and European standards.

They may be becoming more attractive by British standards. A changing attitude toward yields is one example of the new thinking in London. It was just last August that average yields on equities in Britain fell below that of government bonds. This "yield gap" appeared in the U. S. and in Europe some time ago. But Britons are not yet used to it, and many worry about it.

• **New Ideas**—In a recent study of the equity market, *The Economist* of London suggests that British investors will have to "accept lower dividends and earnings yields than those they have been accustomed to in the past." Already, *The Economist* says, they are accepting the idea that equities are not so vulnerable to cyclical risks as they have been in the past, that the American concept of the "growth stock" and its promise of capital gains makes for an attractive, prudent investment. Still, investors must expect a much more volatile market than London has known.

Finally, *The Economist* says that the London Stock Exchange must now expect continuing foreign interest in the market and must (as the Americans have done) find ways of attracting savings from "small" investors and others who have not bought equities before.

• **Reservations**—While they are obviously interested, investors overseas have some reservations. For one thing, there is the heavy dividend withholding tax. And there is the relatively thin nature of the market: It does not have anywhere near the breadth and depth of investor support that Wall Street enjoys. This is worrisome, especially to the Americans.

Also, many Americans still insist that investing in foreign stocks is "buying blind." They do not often get the detailed corporate information and candid reporting that is a matter of course (and often of law) in the U. S. A. While British companies are better than most in this regard, this fact alone will deter many American institutional investors and the more cautious individuals. ●

2. Latin American Speculation

IF THE CAUTIOUS AMERICAN feels mild reservation about the conservative London market (above), he would probably flee in horror from some recent Latin American offerings. Yet there are enough venturesome spirits to have created a bustling new interest in Latin deals.

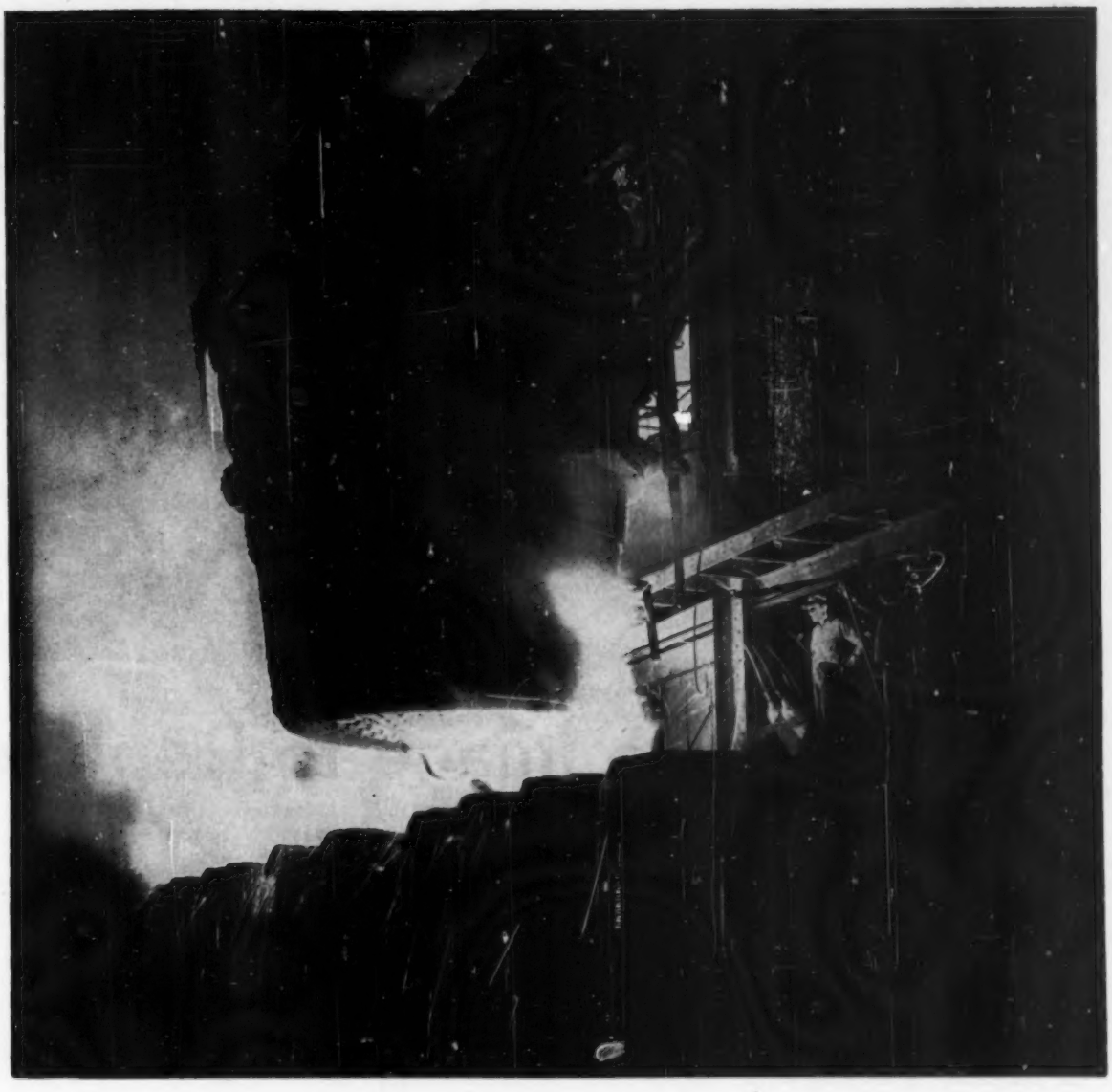
The latest: The Pan American Development Co., Sao Paulo, has been selling, through U. S. real estate men using "hard-sell" advertisements, 25 acres in Brazil for "only $150." It's reported that 700,000 acres of remote Matto Grosso tablelands have been so far sold or put under option in the U. S. A. According to the promoters, the land values could increase 25% to 40%.

• **Novelty**—The novel aspect of this promotion, and the activities of some investment advisory services, is that they are aimed at the "average" investor, not the specialist.

Until now, the only outside investors who put much money into Latin land and securities (not including direct corporate investment in plant and other facilities) have been the sophisticated "smart-money" men (IMD, Aug). They are attracted by high yields—up to 24% on loans, over 30% on some stocks—and capital appreciation of as much as 100% yearly. They are aware of the risks of inflation, misinformation, legal problems, and generally fare well.

Today, more Americans and a few Europeans are investing in Latin American stocks, bonds, notes. There are other advantages besides yield. Margins (the amount that must be paid in cash) are lower than the 90% required in the U. S., and there are often substantial tax shelters (some investors use secret numbered accounts in Panamanian banks). Among the most favored securities are Mexican: Tax-free yields of up to 10% are available on three month paper, to 24% on longer-term. There are interesting bonds returning 11%. Some Venezuelan bonds and stocks, yielding 6% to 7%, are now attracting North American interest. And further south, in inflation-prone Brazil, stock yields run around 15%, with a few on up to 35%.

• **Land, Too**—Real estate, while less popular and more risky, can be even more profitable. Some of the land deals are soundly based on population and natural resource development, with values rising as much as 100% yearly. Near one Mexican boom-town, land rose 400% last year alone. (*Business Week, Oct 17, p 161*)



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A Steady Flow of Steel for World Markets

Every day of the year, Bethlehem plants are busy turning out huge tonnages of steel for users all over the world. A constant flow is assured through Bethlehem's centrally controlled operations, which include every step in the making of steel, from the mining of the ore to the shipping of the finished product.

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★ BETHLEHEM STEEL ★

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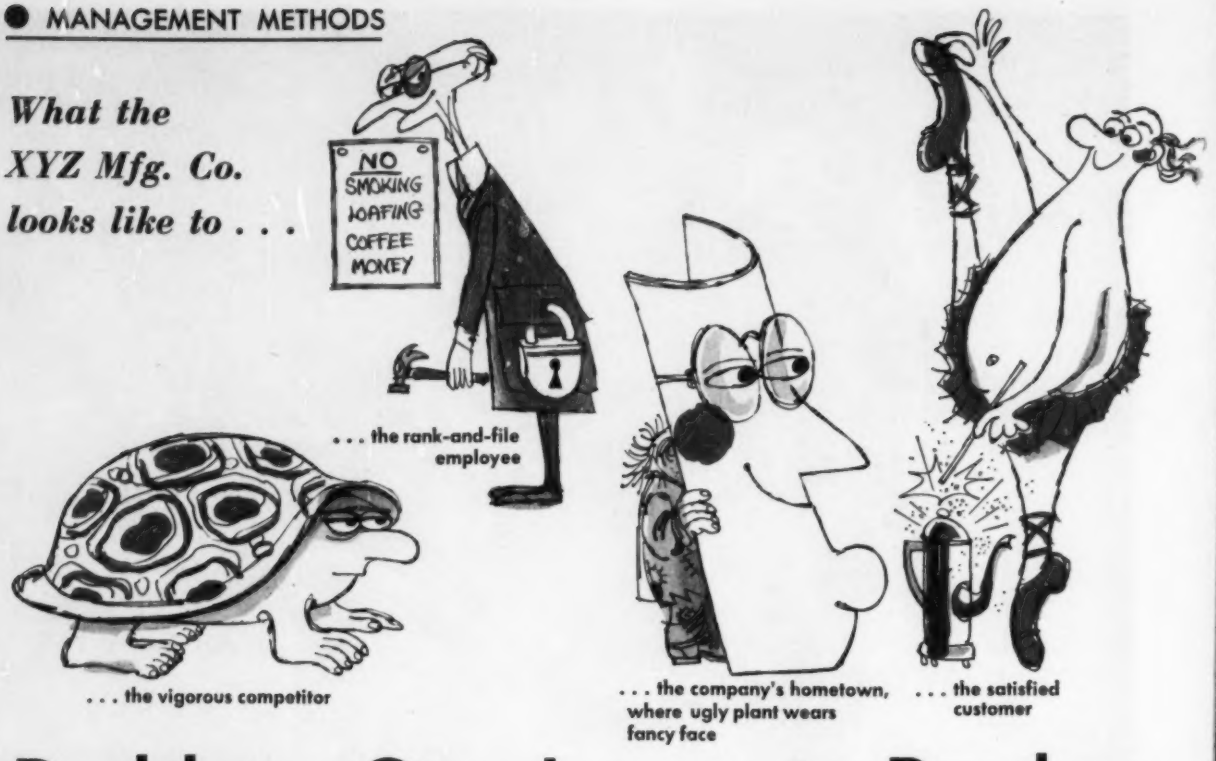
What the XYZ Mfg. Co. looks like to . . .
NO SMOKING LOAFING COFFEE MONEY
. . . the rank-and-file employee
. . . the vigorous competitor
. . . the company's hometown, where ugly plant wears fancy face
. . . the satisfied customer

Problem: One Image to Replace

"I DON'T KNOW what it is," an executive recently commented, "but I'm sure it is very important." He was speaking of the "corporate image," the most fashionable idea to hit the American business scene since the "marketing concept."

The term is being used as a device to sell a company on having a new trademark designed, on buying advertising space in a particular publication, or on retaining a certain firm of consultants.

• **Management Principle**—But there are a growing number of management men who believe that concern with the corporate image is not just a fad. They argue that every company has one: It has many images, in fact, with many publics.

A management principle is involved, they say: Every company must have an image of itself, hammered out by top management, and carried out by operating executives as well as public relations agents. Ideally, this one image should replace all the separate and conflicting notions often held about a company (cartoons, above). It should be an "abstraction of your reason for being," comments one writer.

• **Consistency**—Proponents of the corporate image urge consistency, coordination, and unity of promotional efforts. Contradictions are harmful to the corporate image, they say. A speaker at a recent seminar on the corporate image cited this example: A company recently released two press statements on the same day—one saying the company could not afford any wage increases at all, let alone what the union was demanding, the other announcing the second most profitable quarter in the company's history.

A company's image does not have to fit a pattern, however. One U.S. firm, for instance, is happy with its image as a "crotchety, old-fashioned firm dating back to the Civil War;" and it refuses to consider even a new letterhead.

At the opposite pole, the Container Corporation of America decided to make itself known as tasteful, resourceful, original and design-conscious. To promote this idea, it redesigned everything from checks to delivery trucks and has sponsored a continuing advertising campaign featuring "Great Ideas of Western Man."

Sometimes an image can backfire. A "quality" image may carry with it a connotation of high price. The major American meat packers, who had fostered an image of quality, value, and dependability, found themselves losing business in one locality to a small firm that emphasized "youthfulness, fun, imagination, inventiveness, and sincerity."

• **Unified Identity**—Many big companies see the need to give themselves a unified identity—to appear not a polyglot but a corporation constructed of blocks that fit logically into one another.

Thus, General Motors now defines its area as "anything based on a motor," and Lever Brothers describes its bailiwick as "anything that is used to clean anything." When Brunswick-Balke-Collender Co. bought a hospital supply outfit, it quickly inserted "health" into its slogan, "serving the nation in recreation, education, and defense."

• **Tied to Sales**—A well-informed image can mean actual dollars of sales, as General Electric Co. can attest. Last year, GE sponsored a country-wide sampling of public opinion to find out what people

. . . the public at large

the Many

thought of it as a producer, an employer, a company to invest in, and a force in the U.S. economy. It turned out that people with a favorable over-all impression of GE were more likely to recommend its products than people who held its products in high regard but had no opinions about it as a whole.

Reasoning that the man in the street will be a better customer if he has a broader picture of the company, GE has just prepared a booklet outlining its goals and policies.

• **Personal Rewards**—For the individual management man, a well-defined corporate image can mean personal rewards. One writer on the corporate image, Leo Moore of the Massachusetts Institute of Technology, puts it this way in a forthcoming book: "As he grows in his ability to handle the image and to control his impact upon it, he in turn will grow. He will be able to set broader goals, better measures, make more deliberate analysis, more effective decisions, and seek more regular reviews of his managing activities. He will learn to be a better manager." (*Business Week, Oct* 3, *p* 64)

Equipment Leasing: One Way to Conserve Capital

Considered as a form of medium-term finance, leasing offers advantages—and heated controversy.

LEASE FINANCING has invaded the industrial equipment field. In the U.S.A. today, almost any piece of machinery can be "rented," and it is even possible to lease finance an entire industrial package of land, factory, and equipment.

Such a technique would seem appealing to many companies around the world. More and more, governments are leaning toward tight credit policies (IMD, Nov, p1); and many small companies are hard put to self-finance their expansion whatever the condition of their domestic money market.

There are a variety of forms and definitions of "lease financing." Some of its enthusiastic supporters regard it as a concept that outmodes the principle of ownership. At the other extreme, it is little more than a thinly-disguised form of credit used by manufacturers as a sales tool.

Equipment leasing has found its greatest use in medium-term financing, four to 10 years, the "gray" area between the interests of commercial banks and those of investment banks.

To date, most lease financing of capital goods has been confined to the U.S.A. But some financing companies there are expanding into the international field.

• **Why Lease?**—In some industries, leasing has been used as a major financing tool for expansion. Leasing enthusiasts argue that ownership is not necessarily an advantage. Management's goal is to build cash assets, not fixed assets. And lease financing provides a way to increase a company's cash flow.

Lease financing, in other words, conserves working capital, which can be put to other uses such as building up inventory or expanding a plant.

The critical point is whether working capital can be put to better use. Grocery chains, for instance, have a very high return on capital. For this reason, they lease their real estate and invest all their money in inventory. Petroleum companies invest their capital in crude oil, lease service stations and tankers.

Financial experts warn that managers considering lease financing should use an actual project to compute their rate of return on capital—and the cash-flow advantage they can expect from leasing—rather than an arbitrary 20% or 30% or 40%. But special factors—maintenance problems, for instance—are sometimes involved. Truck leasing is often chosen not only to conserve working capital, but to "get out of the trucking business."

Another caution: Be sure to compare leasing with other forms of finance—bank loans, debentures, time purchase—and not just with outright purchase.

• **Clean Books**—Since lease rental payments are classified as an expense, they do not appear on a company's books as a liability. In the U.S.A., tax deductions available from leasing provide what amounts to a faster write-off than is available under depreciation allowances, and this partly explains the growth of equipment leasing in the U.S.A.

But more important, lease finance makes for a "clean" set of books—fewer obligations, more liquid assets. And a number of company treasurers admit they have selected lease financing for this reason.

There is strong criticism of this viewpoint, particularly from investment bankers. They say that leasing gives only the appearance of more liquidity. Regardless of accounting practice, leasing represents a fixed charge against income, or liability, and carries the same obligation as any form of debt.

At best, bankers say that managements fool themselves into thinking that lease financing will not affect their credit rating. More often than not, they point out, bankers make a practice of "capitalizing" leasing obligations. And lease financing itself depends on

the general credit rating of the lessee.

And at worst, critics charge that lease financing is used not only to conserve capital, but sometimes to mislead stockholders, investors, and bankers.

• **Leasing Plans** — The lowest cost equipment lease is a straight lease. After the capital cost is paid off, the lease is usually renewable at a small annual rental. The life of the lease should be close to the life of the equipment, except where the capital outlay required is far too great to even consider the purchase.

Most equipment leases today include an option to purchase—at a fair market price, or for a token $1 at the end of the leasing period. This form of leasing is, for the most part, a thinly disguised form of conditional sale. A growing number of American manufacturers are offering these plans, either through their own financing subsidiaries or through an outside financing company.

As a sales tool, leasing offers an appealing slogan: "Put this equipment to work—without buying it." In addition, the regular return of equipment provides "built-in sales prospects."

One manufacturer of materials-handling equipment, as a typical example, offers his U. S. customers lease financing from two to five years, and time payments up to three years. Under the leasing plan, payments are made in either equal monthly installments or in accelerated payments—for a five-year lease, 40% the first year, then 30%, 15%, 10%, 5%.

The total "add-on" cost for a $1-option, with equal monthly payments, is 11% over two years, 16½% over three years, 22% over four years, 27% over five years. "Add-on" is less for accelerated payments—22% over five years, for instance.

If proof is needed that this kind of equipment leasing is essentially a credit device, note this statement from the manufacturer's handbook: "Any lease with a $1 purchase option can be paid up during the period of the lease by paying a prescribed percentage of the unpaid rentals." All operating costs, of course, are paid for by the user rather than the "owner." ●

Reports like these . . .

OVERSTOCK REPORT

PART No.	ON HAND	ON ORDER	PURCH.	MFD.	RE-SERVED	AVAIL-ABLE	MINIMUM ECON. LOT	OVERSTOCK QUANTITY	USAGE	WEEKS OVERSTOCK
824	200	---		X	---	200	50	150	10.2	14.7
834	345	---		X	---	345	50	295	8.6	34.3
1002	1000	3500	X		500	4000	3900	100	50.0	2.0

REORDER REPORT

PART No.	ON HAND	ON ORDER	RE-SERVED	AVAIL-ABLE	MINIMUM	LEAD TIME	USAGE	OPTIMUM REORDER QUAN.	STANDARD PRICE	STANDARD COST
1234	306	200	228	78	100	3.9	28.6	200	37.27	745.40
1307	1625	---	1400	225	410	6.0	68.3	1700	.30	510.00
1449	---	100	48	52	60	6.0	10.0	250	44.00	1100.00

. . . available through small computer, are today . . .

Solving Inventory Problems

TIGHT CREDIT, fluctuating raw material prices, strikes, changing consumer tastes — these make up a catalog of critical present-day problems for management in many nations of the world. And they are often felt most acutely in the area of inventories, which many managers believe is their most difficult control problem.

There is no magic formula to solve inventory control problems: Good judgment and good luck remain the touchstone of success. But they can be helped along by mechanical means, and electronic data-processing equipment — computers — is beginning to prove useful to smaller as well as to the largest companies.

• **Case Study** — The sample reports above represent the kind of material a medium-sized, relatively inexpensive computer (less than $50,000 to buy, less than $1,500 monthly to rent) can produce. They form part of a case study presented by engineers of Royal McBee Co., a U. S. maker of data-processing machines, at the recent High Speed Computer Conference at Louisiana State University.

The case study involved a medium-sized company of 500 employees, doing about $15-million worth of business a year. Its business is job-lot manufacture of repetitive runs of metal parts and simple assemblies.

Here is the background to the inventory:

—An inventory of 3,000 items consisting of raw materials, work-in-process, purchased parts, fabricated parts and subassemblies, plus a small inventory of furnished goods.

—About 300 withdrawals from stock per day (especially in raw materials).

—Some 100 production orders released a day.

—A work-in-process cycle averaging six weeks.

—A standard cost system including both material price and usage standards.

Information is fed into the computer in this way: From copies of orders, unit cards are drawn up for each material or part needed or ordered. These are then sorted into number sequence and converted to punched paper tapes. Next, the tapes are fed to the computer, which makes the appropriate entries. Since the input is sequenced it can be handled in batches, not all at once.

• **Inventory Status** — The computer is thus able to store information on a number of balances:

1. Quantity on hand (actually in the bins).
2. Quantity on order (from outside sellers or by production order).
3. Quantity reserved for outstanding production orders.
4. Accumulated usage and price.

These balances are not meant as

People stop and whisper--

Do you know what a "test car" is? Well, it is a camouflaged automobile just about ready for assembly-line production. It moves about mysteriously along the main express highways, through mountain passes and over the worst roads in the world, driven by engineers of the manufacturer's plant, who test it and check its every fibre. Once this "test car" has successfully completed the many long months of severe endurance trials the new model then appears one fine day all resplendent and magnificent before the public view. While the new Mercedes-Benz models 220, 220 S and 220 SE were still being relentlessly put through the mill in many countries as "test cars" to determine and verify their quality, people sometimes stopped and stared at this models so unfamiliar to them. Now these attractive, large new cars are already in use on many roads, and people once more stop and say "Why, that's the new Mercedes-Benz". They admire the new styling, the pleasing and consequently timeless lines of these vehicles with the distinctive Mercedes-Benz character. But when you once drive these cars yourself, you will find even more to admire. Utterly new, exceptional performance qualities that carry you smoothly and securely over any kind of road - - new safety, new comfort and much more. You may therefore expect much of these cars - - and delight in the feeling of experiencing still more than you expected.

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The new Mercedes-Benz models 220, 220 S and 220 SE display their superb quality in each and every particular. You are certain to be delighted with the many new features of these cars. Quality gives you the assurance of such enjoyment for many years to come. Range of production: Passenger cars, trucks, buses, Unimog all-purpose-tractors, and Diesel engines.
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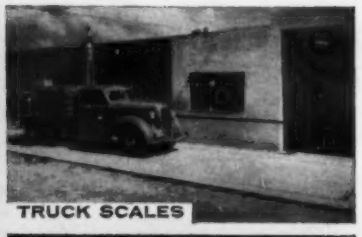
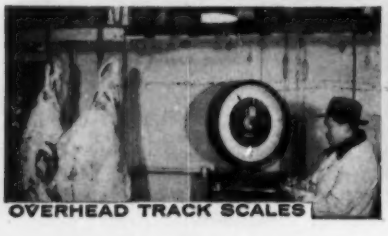

TRUCK SCALES


OVERHEAD TRACK SCALES

COUNTING SCALES

a permanent record and so are merely stored, not punched or printed out. But the computer can, of course, be questioned about the status of an item and give a printed answer almost at once.

From these factors the machine calculates the most important total, the "Available Balance". This is defined as the quantity on hand, plus quantity on order, less quantity reserved, and represents the quantity against which production may be planned. Unlike the other balances, the Available Balance is not stored but computed and punched out with its code number and typewriter control information. The primary purpose of punching it out is to keep a permanent record of inventory.

The computer's printed reports, like the two shown on p 20, give management the information it needs on questions like oversupply and the need for reordering.

• **Inputs** — Input information is of two main types: procurements and receipts, which come from the company's purchase and production orders and tend to increase its inventory balance; and reservations and issues, which arise from incoming orders for the product and tend to decrease the balance.

With a longish work-in-process cycle, this particular company had to find some way of earmarking materials reserved for orders that have already been scheduled. It does this by taking the incoming sales orders, reducing them to their material components, "taping" them on a "reservations tape", and adding them to the reserved balance—thus decreasing the balance available for production.

Whenever materials are issued, the amount issued is noted on the cards, which then are returned to part number sequence and used to produce the "issues" tape. This is fed into the computer. There the amount is subtracted from the balance on hand and added to the accumulated usage.

Usually the quantities reserved and issued are the same. If there is a difference the computer stores both totals, with the part number and order number. Later, when the company is looking into variations in material prices, this information can be printed out. (*Purchasing Week, Oct* 19, *p*18)

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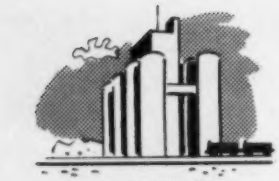
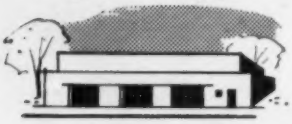
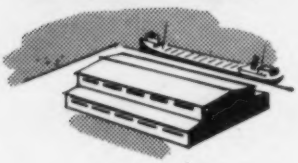


COLD STORAGE: 2½ MILLION CUBIC FEET!

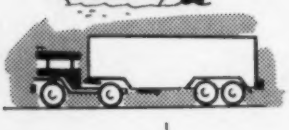


MARINE TERMINALS: 400,000 SQUARE FEET!

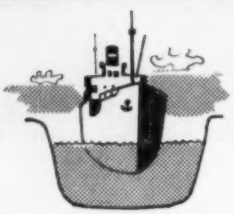


HEAVY-LIFT CRANE: 50 SHORT TONS!

CONNECTIONS WITH: 150 TRUCKING COMPANIES!



NAVIGABLE DEPTH—27 feet



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In Management

HIGHWAY OFFICES for traveling businessmen are being set up in the U. S. A., under a franchise arrangement with Richey Enterprises, Indianapolis, Indiana. The drive-in office consists of a sheltered booth, with a telephone to a central office where there are 24-hour secretarial help, dictating machines, long-distance phone facilities, and an answering service.

A SATURDAY LOTTERY is one way to keep workers on a six-day week in Germany. The south German firm of Bauknecht offers a lottery of 20 prizes—in the form of Bauknecht refrigerators and washers, plus free beer and sandwiches and the usual over-time—to people who show up on Saturday. Throughout Germany, a worsening labor shortage has sent managers scurrying around to lure workers away from other concerns, even to buy other companies solely to get a few hundred men. The government, meanwhile, is importing 600 to 700 Italian workers weekly.

"COMPLETE OVERHAULING" is required by most boards of directors, says an American university official and board chairman. He believes in the "working" board, and criticizes directors who are only "king-makers" and "watchdogs." In a typical company, he says, directors' jobs are not clearly defined, directors are not working hard enough, and they are not qualified enough—too many are retired executives, and "old friends." (*Business Week, Oct.* 17, *p* 62)

DIRECTOR K: An angry stockholder of the U. S. A.'s Virginia-Carolina Chemical Co. cast 1500 for N. S. Khrushchev for director.

5 Big Advantages of EUCLID'S TC-12 Twin-Power Crawler

Functional "years ahead" design, combined with unequalled power, makes the new series TC-12 the best all-around performer in the big tractor field. Its big power and big performance helps beat the pinch on profits...on every kind of big tractor work. Check these cost-cutting features:

Twin Engines with a total of 425 net horsepower . . . separate Torqmatic Drives each consisting of torque converter and semi-automatic transmission...more workability for heavy dozing, ripping, push-loading and towing than any other "super" tractor.

Independent Track Drives give the big TC-12 almost unbelievable mobility and maneuverability. With its separate power train and Torqmatic Drive, each track can work all the time because its power and speed is individually controlled. Operator has immediate, positive control for quick turns and side slope work.

Rigid Track Alignment is constantly maintained because each track is positioned to its main frame...each half of the tractor oscillates on a big diameter transverse shaft which provides maximum traction in rough going and increases track life. The tractor can be easily split into two halves for transport from one job to another.

Fast, Easy Operation is achieved by the separate Torqmatic Drives and simple controls. There's no master clutch...changes from one speed range to another are made under full power. Excellent visibility front and rear, and comfortable operator's seat, help to increase productive capacity. Good machine balance and stability, and "fast on its feet" performance, make the TC-12 unequalled for any big tractor work.

Service Accessibility that cuts downtime to a minimum is a feature of TC-12 design. Unitized assembly of converter, transmission and drive case components permits fast servicing or replacement without major tear-down of other parts. For example, both drive sprockets can be removed or replaced in about one-third the time required for the same work on a competitive big tractor. Planetary final drives can be serviced without breaking track or pulling sprocket.

Whatever the job, if it's a big tractor application the TC-12 is your best choice. This Twin-Power crawler gets more work done every shift with less downtime than other big tractors. Ask your Euclid dealer for facts that show why the TC-12 brings the best return on investment.

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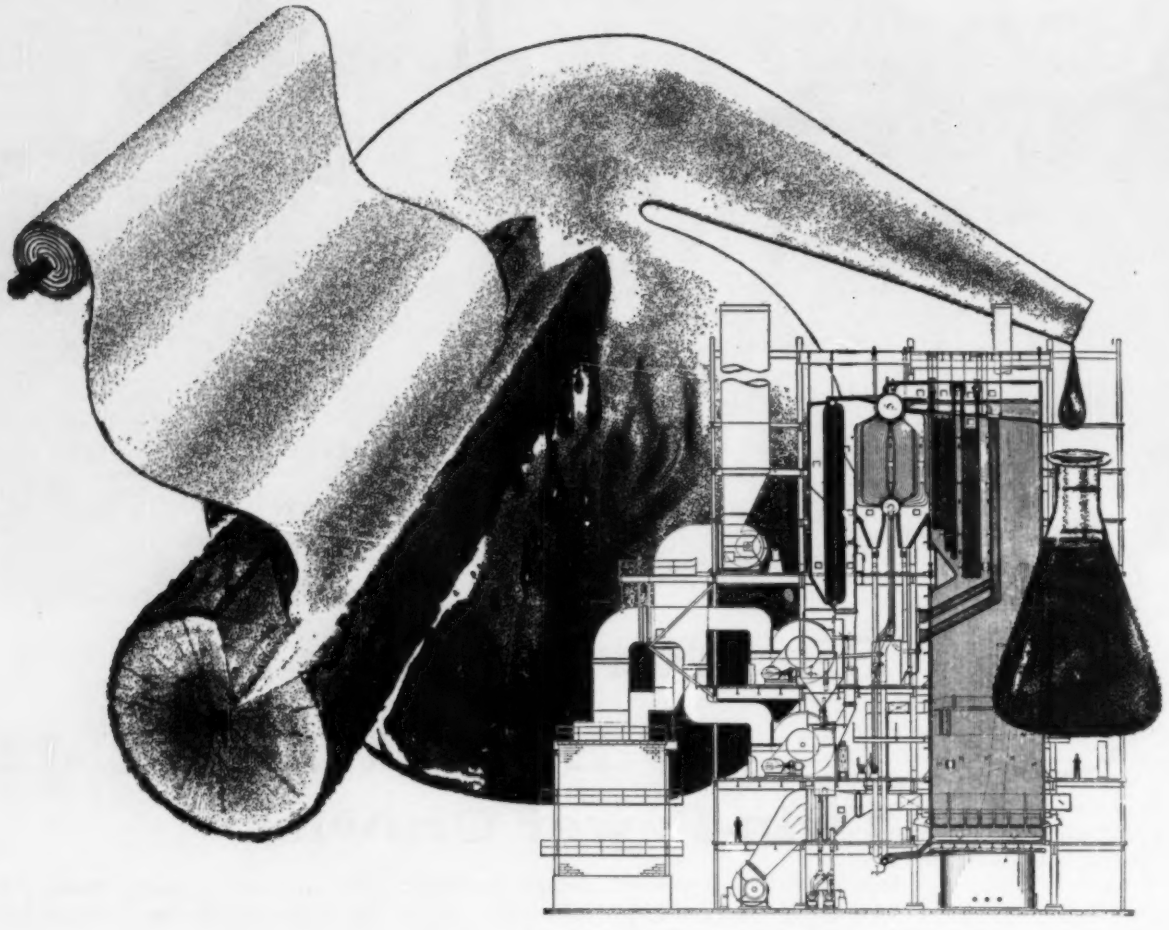

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SIEMENSSTADT in West Berlin once employed 80,000, now has 40,000, and accounts for 25% of Siemens production.

Industrial Fortress in Berlin

ON THE VERY DAY Mr. Khrushchev was threatening to turn access to West Berlin over to the East Germans, about a year ago, the House of Siemens boldly announced plans to spend the equivalent of $8-million to expand the cluster of Berlin factories known as Siemensstadt (picture, above).

That $8-million raises Siemens' total "bet" on Berlin to over $100-million, the amount the company has invested there since the dark days of 1948. How safe that investment is right now is probably known only to Mr. Khrushchev. But it would not be surprising if Dr. Ernst von Siemens (cover picture), the company's chief executive, permitted himself a sigh of relief when Messrs. Khrushchev and Eisenhower agreed to put the question of Berlin on the shelf—for a while at least.

• **Roots** — Other companies are gambling on Berlin's continued ties to the West. But Siemens is in a special position. It grew in the city. It is rooted there, over a 112-year history. It is the city's largest employer. And there are practical considerations: Berlin has a large pool of highly-skilled workers, and the German Federal government offers liberal tax inducements to encourage investment there.

Siemens is in a good position to stand firm in Berlin. It has the strength of being West Germany's largest manufacturer, with 1958 sales of $876-million (Krupp reports $821-million).

Through its two major companies—Siemens & Halske AG. (S&H) and Siemens-Schuckert Werke AG. (SSW)—it operates large plants throughout West Germany that make cable, switchgear, generators, telecommunication equipment, and to some extent duplicate facilities in Berlin. In the case of an emergency, Berlin output could be fairly readily transferred to some of these plants.

• **Founded on Research**—The House of Siemens gets its major strength, however, from its reputation as a pioneer in research and electro-mechanical development. Throughout its history the Siemens name has been linked with innovations. Out of Siemens' laboratories and factories in recent years have come:

—A fully transistorized digital computer.

—Ultra-pure silicon for various types of transistor.

—An over-the-horizon (tropospheric) communication system linking West Germany and West Berlin by interference-free telephone.

Now under development in Siemens laboratories are other impressive projects—such as a radio or telephone system capable of handling 40,000 to 50,000 messages simultaneously, compared to the 2,700 under present systems; a transitorized telephone exchange about 100 times faster than exchanges now in use.

Directing this scientifically-oriented company is a scientifically-oriented chief executive, Dr. Ernst von Siemens, 56, a grandson of founder Werner Siemens. Engineer von Siemens' chief aides also are at home in the laboratory. Dr. Hans Kerschbaum, who heads S&H (electronics and telecommunications), is a physicist and micro-wave specialist. Dr. Friederich Bauer, an engineer, runs SSW (heavy electrical equipment).

• **Small Shop in Berlin**—The tradition that these men carry on dates from 1847, when Werner Siemens, a Prussian artillery officer, teamed up with a gifted mechanic, Johann Georg Halske, to set up a small shop in Berlin. Within a year, the $7,000-company had built a telegraph line between Berlin and suburban Potsdam, and was working on medical apparatus and railroad equipment.

A major achievement came in 1870, with the construction of a telegraph line between London and Calcutta. By this time Halske had left the company, and the House of Siemens was already well known through subsidiaries in

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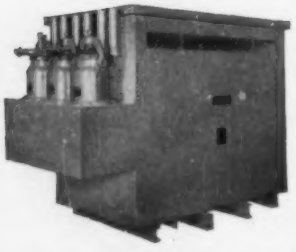

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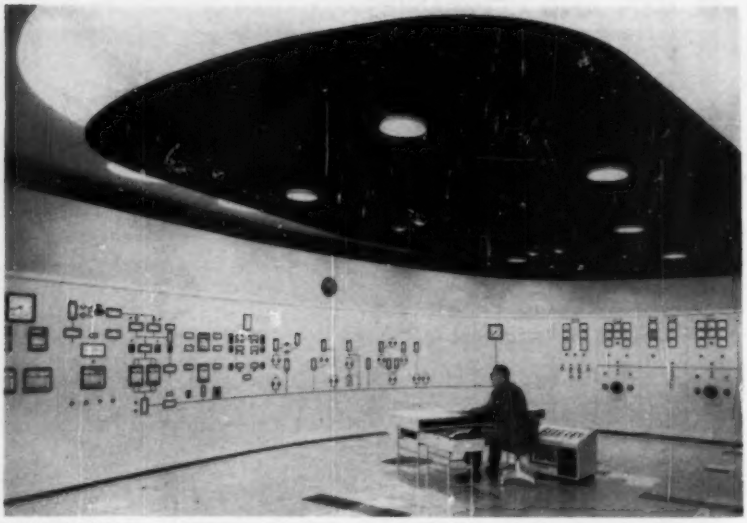


CONTROLS by Siemens are nerve center of water works near Luxembourg.

England and Russia. It created its major subsidiary SSW in 1903 by taking over Schuckert & Co.

The factories and housing facilities that today make up Berlin's Siemensstadt got started in 1903, on recovered swamp land near the River Spree. The district grew with Berlin. By the end of World War II, its factories employed 80,000 persons, many of them living on the property or commuting on a Siemens-built railroad.

It was Siemens' good luck to concentrate its factories in what was to become West Germany and West Berlin. Unlike its major competitor—Allgemeine Elektricitaets Gesellschaft (AEG)—Siemens lost little of its plant and equipment to the Soviets.

The company's pre-war factories have been rebuilt and expanded with an investment of $350-million since 1948. Over 90% of Siemens' plants and laboratories today are less than ten years old, and about 50% are less than four years old.

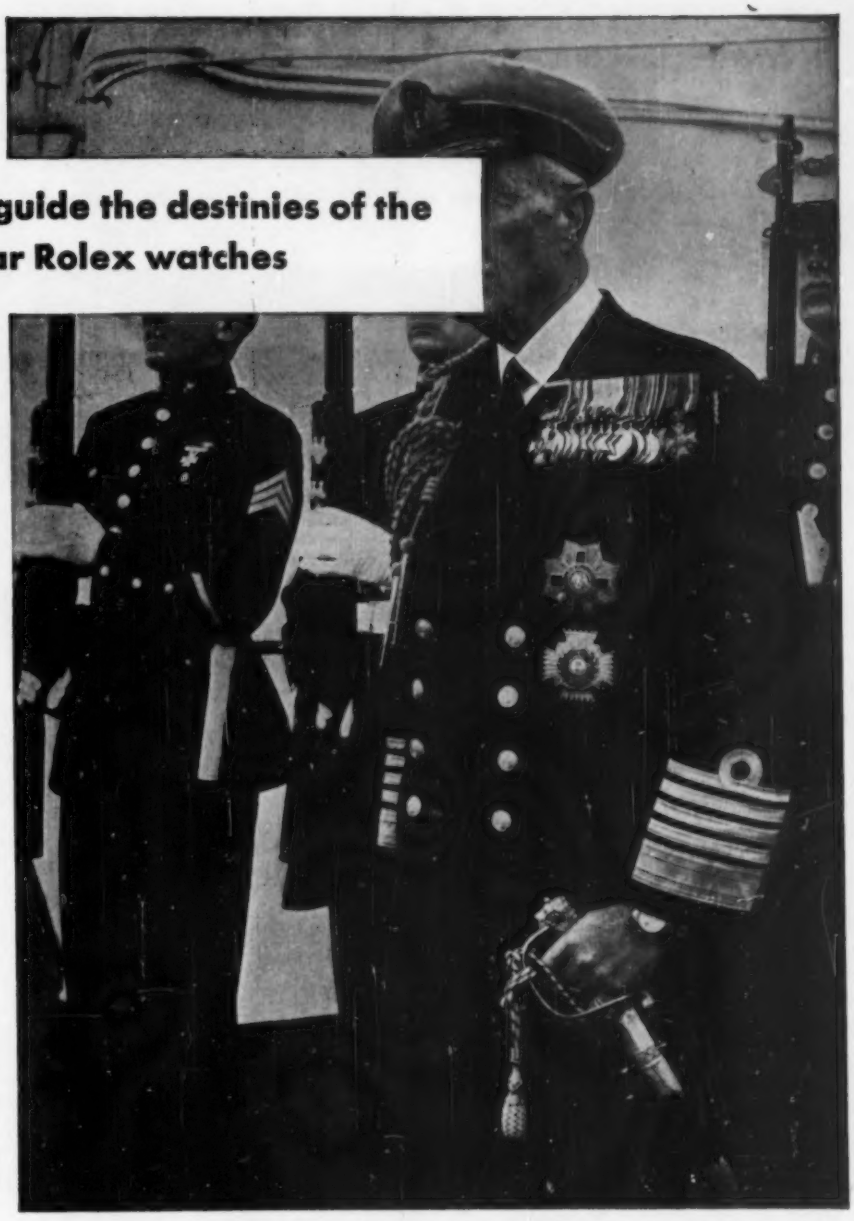
• **World Outlook**—Another pillar of Siemens' strength is its international business. There are big projects—such as a modern telecommunication network in Saudi Arabia, power plants in the United Arab Republic, a complete radio station in Lebanon, and a participation in the consortium building a steel mill at Rourkela, India. Siemens has subsidiaries in about 30 countries and representatives in another 55.

Siemens' overseas sales have been increasing faster than those at home, and today they are six times what they were before the war. Foreign sales in 1958 were $285-million, about two-thirds of it exports from Germany, the other third from overseas production.

• **Big Stake in EEC**—Siemens, of course, has a big stake in the European Economic Community (accounting for 21% of foreign sales), but at the moment its business with the "Outer Seven" Free Trade Area countries (about 23%) is even larger. Throughout Europe, Siemens' consumer goods—appliances and phonograph records—are benefiting from today's personal consumption boom. Another 23% of foreign sales is in Asia, Africa, and Australia.

The company hopes to see Latin America turn into a major market, and it has invested nearly $60-million in the area since the war. Typical projects: a power plant for Brazil's huge Furnas dam, transformers for Colombia.

Siemens soon may be increasing its efforts to sell more consumer products in the U.S.A., which now accounts for only 2% of overseas sales. And it has not lost interest in Soviet bloc business, which once accounted for 20% of Siemens' foreign sales and now is just 2%. While the Berlin crisis was still simmering last summer, the company received $10-million-worth of Soviet orders for transformers and locomotives. (*Business Week, Oct* 17, *p* 184)



Men who guide the destinies of the world wear Rolex watches

YOU KNOW their names as you know your own. You know their faces from a thousand newspaper photographs, their life stories from a hundred magazine articles. You have seen them and heard their voices on newsreels and on your television screen. Their actions and decisions influence the pattern of our lives.

We cannot mention their names, or show pictures of them. It would not be fitting to do so, for they include royalty, the heads of states, great service commanders. But we invite you to look carefully at the next pictures that you see of them, at their wrists as well as their faces and clothes. You will notice that in almost every case they wear a wrist-watch. That watch will most likely have been made by Rolex of Geneva.

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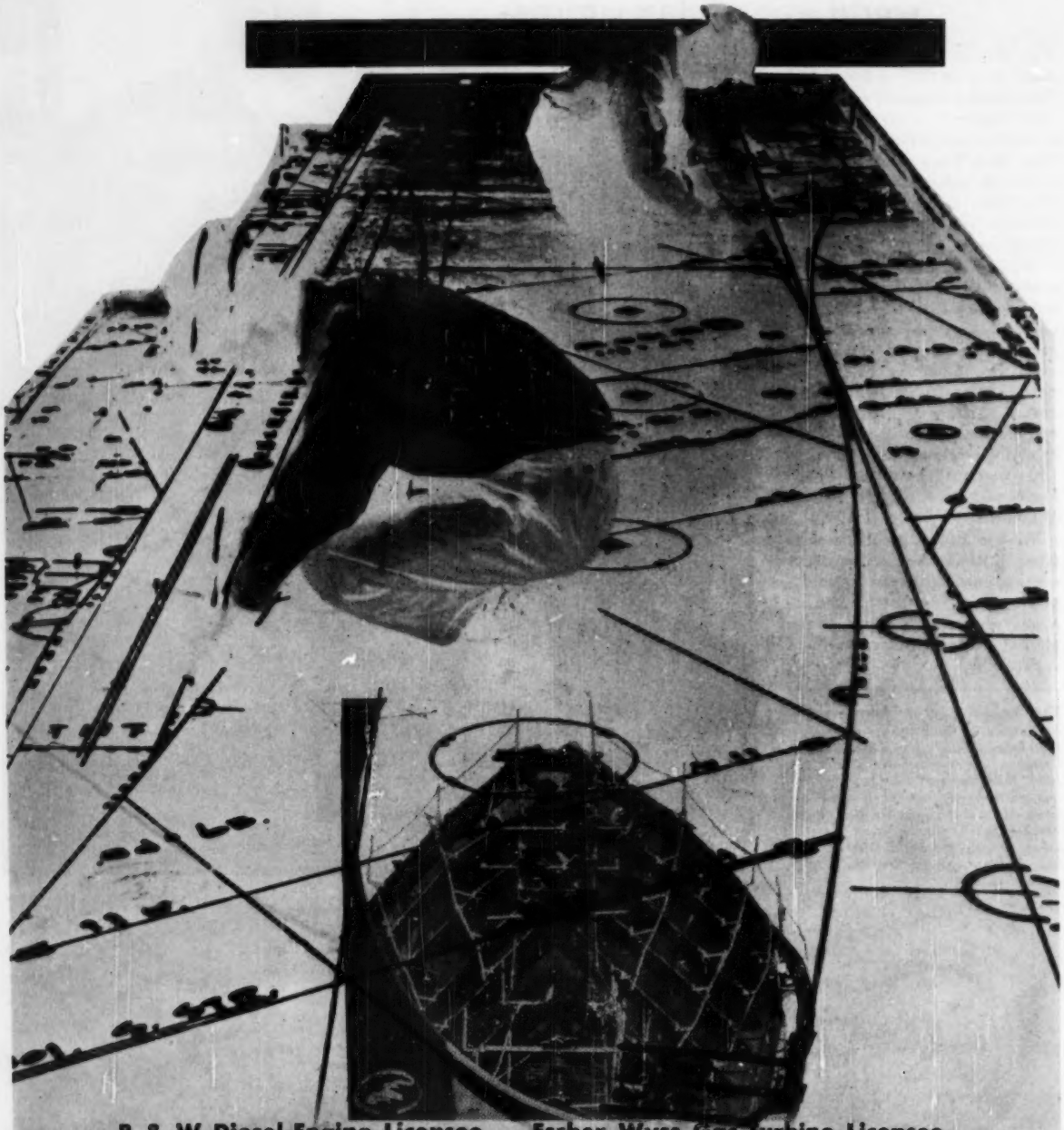

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UK Finances US Skyscraper

Jack Cotton

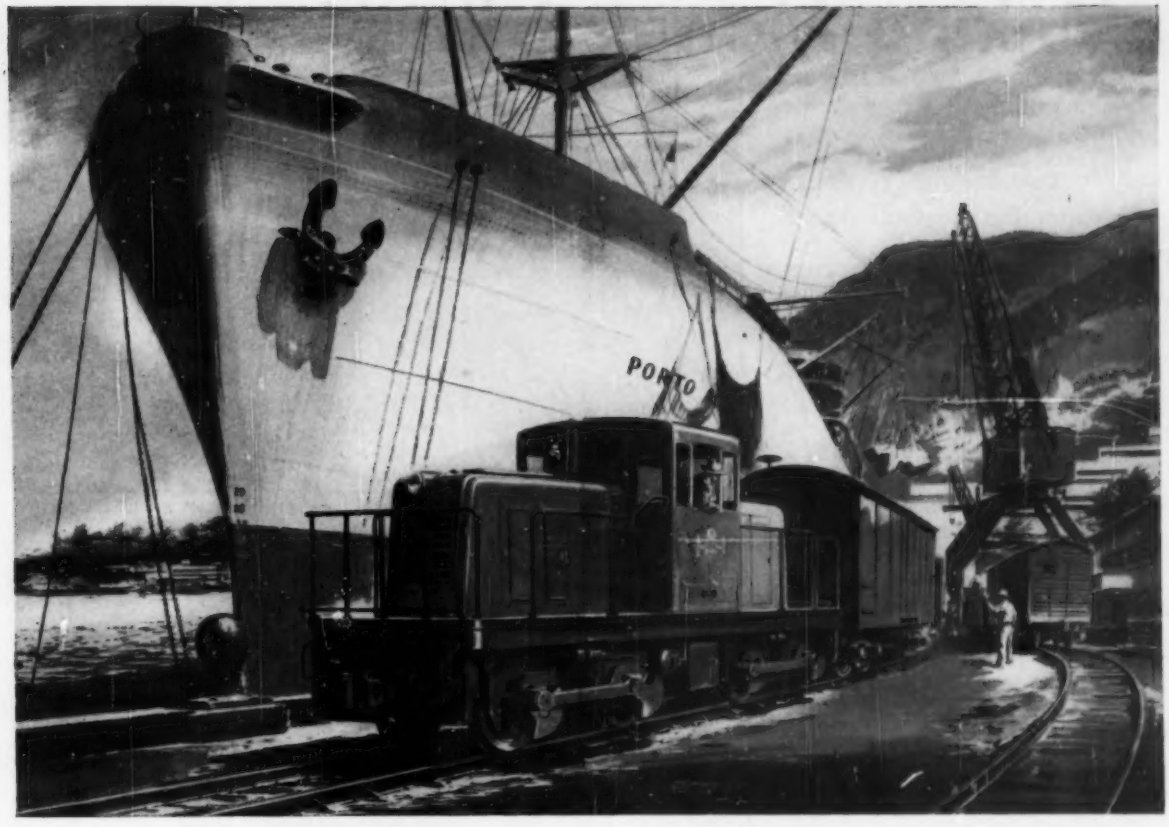
U. S. REALTORS have lacked neither capital, courage, nor prospective tenants, to put up scores of giant office and housing projects since the war. But for their latest effort —a 57-story office building to tower over New York's Grand Central Terminal—they are reaching across the Atlantic for $25-million of financing. It will come from Britain's City Centre Properties, headed by Jack Cotton (above).

• **Big Things**—Cotton is used to doing big things. Like the New York realtor Erwin S. Wolfson, the man who sought his help, Cotton has spent the postwar years building blocks of office buildings and modernizing cities. His company today has the backing of the powerful Pearl Assurance Co.

Plans for Grand Central City—which may cost $80- to $90-million —had been under study for most of the postwar decade. The project was side-tracked many times.

Then, early in 1958, Wolfson announced he was going ahead. But he delayed looking for financing in the hope that added tenants would improve his mortgage terms. Tenants, in turn, proved reluctant to sign until uncertainties were removed by proper financing.

This is what Cotton and his associates will provide, based on their faith that Grand Central is the "finest site in the world." They will be matching the $5-million equity put up by Wolfson and associates, and also taking $20-million in senior securities of the corporation. (*Business Week, Oct* 31, *p* 32)



Seventeen G-E diesel-electrics help increase efficiency of Brazil's ports

Eleven Brazilian ports, from Fortaleza in the north to Porto Alegre in the south, will benefit from the purchase of 17 new G-E diesel-electric locomotives. The units, used for switching freight cars serving the ports, will facilitate the exportation of Brazilian goods as well as the distribution of imported products and contribute to the country's overall economy.

This purchase, part of an extensive railroad modernization program, is in addition to the 358 General Electric locomotives now in operation on Brazilian railways. The change-over from steam to diesel-electric power has helped save millions of cruzeiros each year.

The units ordered include fifteen 45-ton and two 65-ton diesel-electrics, world famous for these outstanding characteristics: lower fuel consumption than other types of motive power; low operating and maintenance costs; simplified construction for quick, easy maintenance; smooth, easy-to-operate electric drive; ability to operate for long intervals without major overhaul. And because of their reliability and high availability (as much as 98%), fewer units are needed – initial investment is kept to a minimum.

For assistance in determining your specific haulage requirements, contact your nearest International General Electric Company representative. He has the training and knowledge to show you how General Electric diesel-electric locomotives can provide more efficient transportation. (120-E11)

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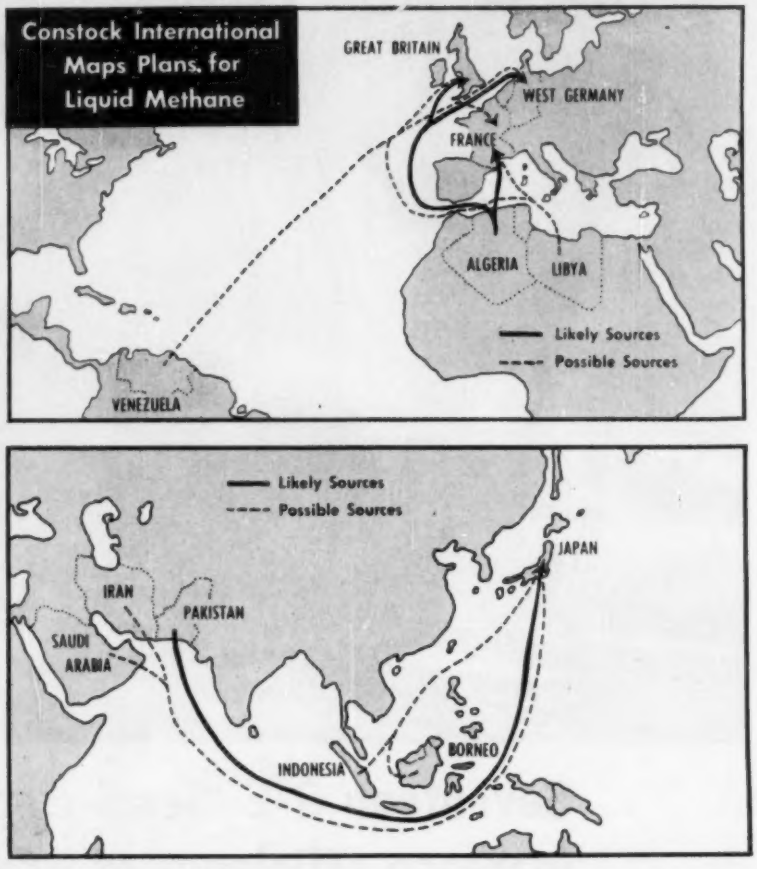
Making Money with Methane

Gas going to waste in petroleum fields (maps) soon will be fueling plants in Britain, Europe and Japan.



NINE YEARS OF RESEARCH—with a bit of a gamble thrown in—may now be ready to pay off for two American companies.

The gamblers: Union Stock Yard & Transit Co. and Continental Oil Co., through a subsidiary called Constock International Methane.

The beckoning prize: Huge new markets for liquefied natural gas.

It is clear now that the bulk shipment of liquid natural gas by tanker is nearing commercial reality. One proof is the British Gas Council's decision to seek government permission to build one or two tankers capable of hauling 20,000 tons of methane. And Constock is at work on even more elaborate plans, involving several large tankers to link world production and consumption centers (maps).

Both plans, according to a report in *Petroleum Week*, owe much to the successful trial shipments of the Methane Pioneer (IMD, Apr, p45), sponsored jointly by U. S. and British interests. The experimental tanker so far has delivered four cargoes—8,000 tons of liquefied methane—from U. S. petroleum fields to storage facilities near London.

The trial runs of the Methane Pioneer proved that "the ocean transportation of liquid methane gas is now technically and economically practical," says John A. Murphy, Constock vice-president. The company hopes to make its first large-scale shipments to both Britain and Japan in about two years, and shipments to West Germany and France about a year later.

• **Success after Nine Years**—Union Stock Yard became interested in shipping gas by tanker back in 1951, when company officials became impatient with the high prices they were paying for fuel for their Chicago power plants. First studies were aimed at barge shipments up the Mississippi River.

In 1954, the company joined Continental Oil forming Constock and starting a $14-million research program. These efforts led to a liquefication plant in Louisiana, U.S.A., and the first transocean shipment of methane last February on the Methane Pioneer.

Methane, the principal component of natural gas, is one of the most plentiful resources on earth. Much of it goes unused today in such petroleum-rich countries as Venezuela, Iran, and Saudi Arabia.

• **Cheaper Fuel**—Constock believes that methane can be delivered to large consuming areas—Japan, Britain, West Europe—at a price "considerably cheaper" than these countries now pay for making their gas from coal or petroleum. The company has not revealed any details on cost, but others have estimated that methane can be delivered by tanker to London at about 59¢ per Mcf—compared to the $1.60 per Mcf now paid in Britain for manufactured coal gas.

Constock believes its first European market will be Britain, followed by West Germany and France, and then possibly the Scandinavian countries and Italy. The methane may come from Algeria, Libya, or Venezuela—or all three. Constock will build liquefication plants wherever it can find an available supply of gas.

Japan's first liquefied methane probably will come from Pakistan, where Constock has been negotiating with the government. Present plans call for building a liquefication plant in Karachi, using Sui Field gas.

• **French Efforts**—Two French groups, Gas de France and Segans, also have been discussing building a methane tanker. They have been in contact with Constock. Asked if a joint venture is contemplated, Constock officials would say only that they have been "discussing the problem of transporting Algerian gas" with these groups. ●

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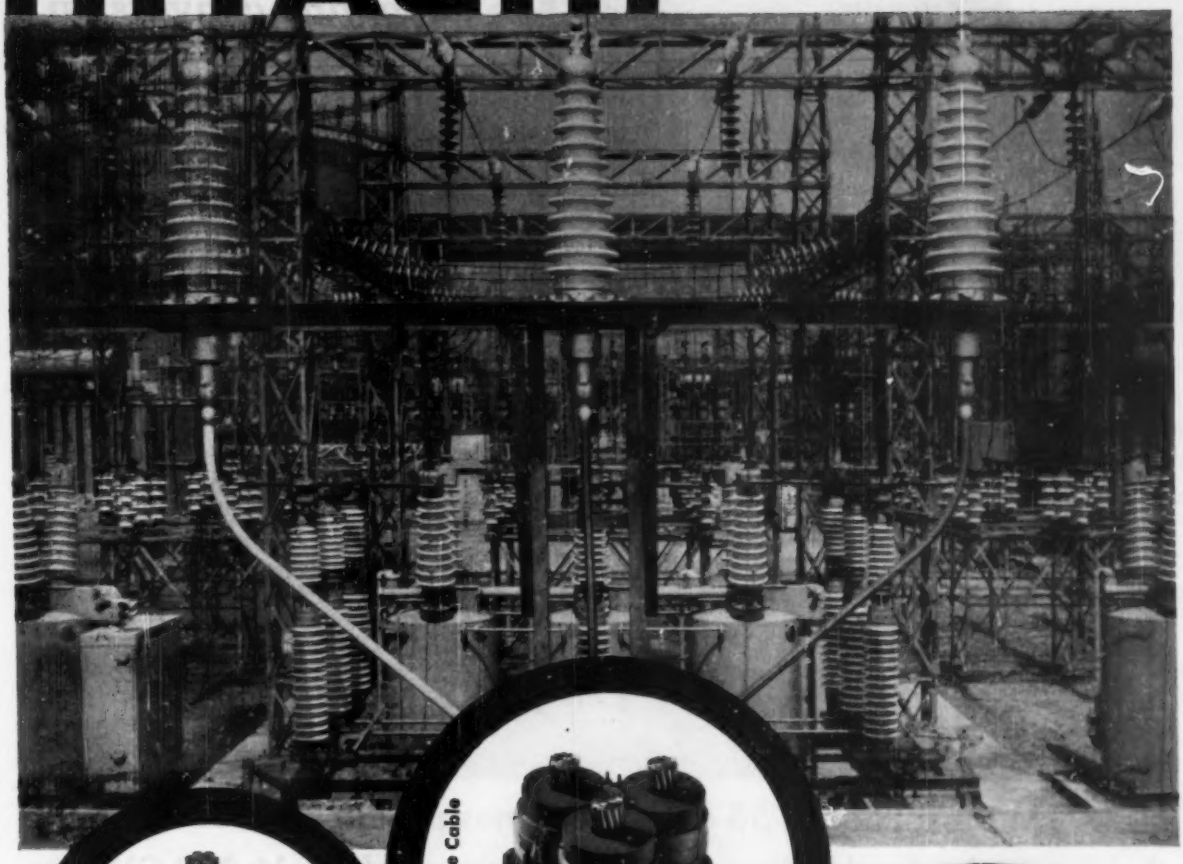

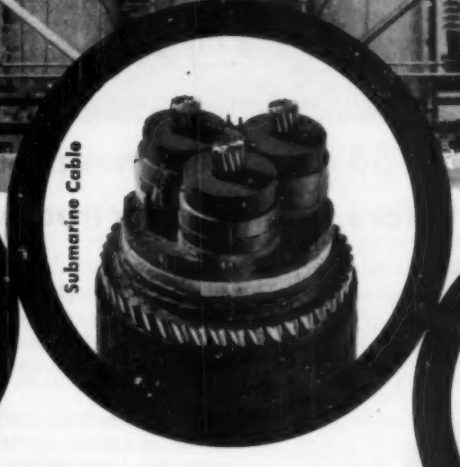

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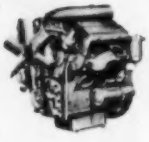

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GENERAL MOTORS LOCOMOTIVES

Technology in Brief

Wool With a Seersucker Finish

Two British textile experts, D. Sims and J. D. Speakman, have developed a process for giving wool a permanent seersucker finish. The fabric is impregnated in 1% sodium metabisulfite solution and then fed into a compressive-shrinkage machine with a heated top roller. The fabric shrinks 12% to 13% in the areas where it contacts the heated roller, but then retains its dimensions permanently. (Textile World, Oct, p 69)

Gamma Rays Improve Citrus Fruit

Lemons and oranges are being experimentally stored for long periods after being treated with gamma radiation in the U.S. The fruit is artificially inoculated with fungi, incubated for 18-20 hours, then subjected to rays. Irradiated lemons remain free from decay for 12 days, oranges for 20 days, at 24 C, while untreated fruit rots in 3 or 4 days. (Food Engineering, Oct, p 117)

Russians Make Solid Gasoline

Soviet scientists have been coating tiny droplets of gasoline in plastic and combining these drops into solid "bricks" of fuel. The Soviets report that these bricks contain 95% gasoline by volume, and can be burned like lumps of coal at temperatures as low as -87 C. They can be pressed back into liquid gasoline by a special machine. (Business Week, Oct 3, p 145)

Infrared Separates Salt and Impurities

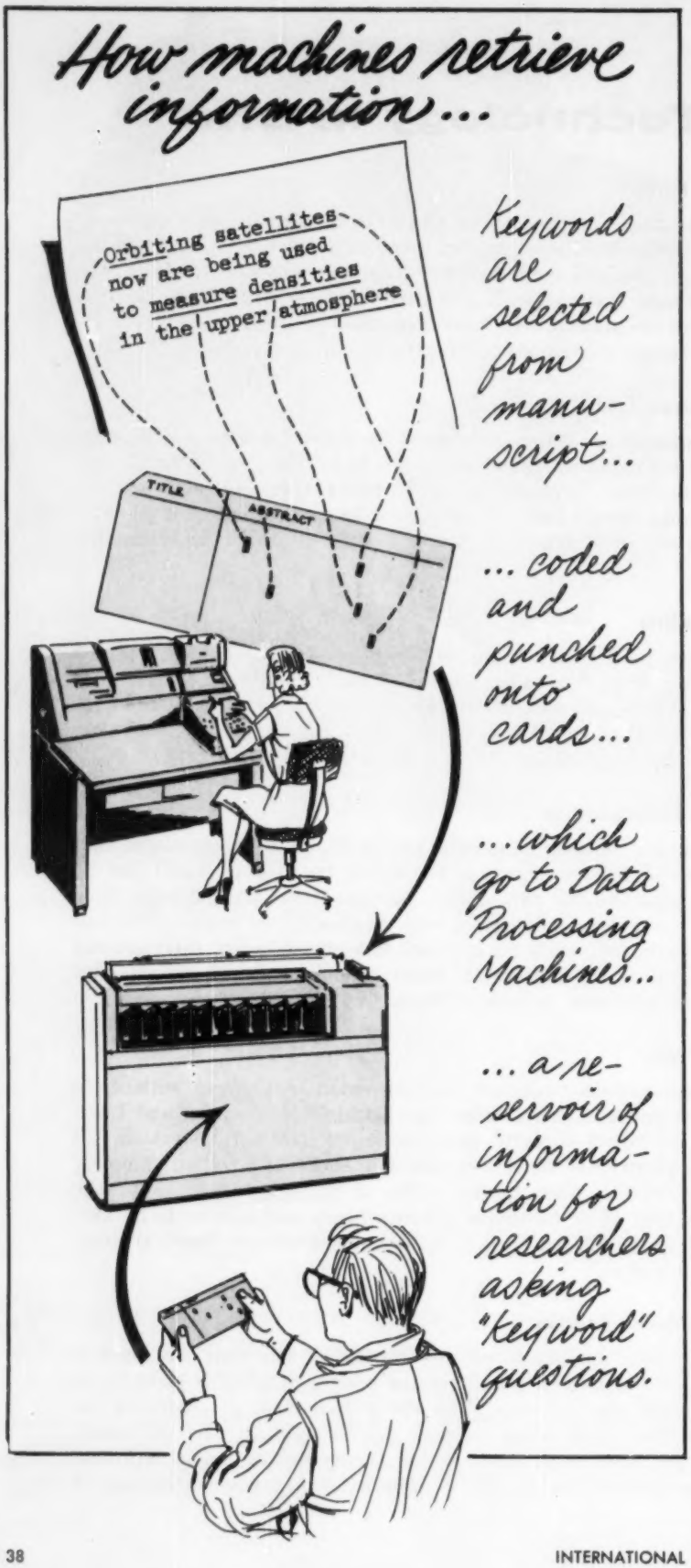
A new process for refining salt, patented by U.S.A.'s International Salt Co., Inc., uses the difference in heat absorption between rock salt and its impurities to separate the two. Salt is subjected to infrared rays, then passed along a conveyor belt coated with heat-sensitive resins: The impurities cling to the belt, while the pure salt falls off into a bin. International Salt plans to license the process for separating minerals, chemicals, food and agricultural products. (Chemical Week, Oct 17, p 73)

Polypropylene Takes to Color

Polypropylenes—newest "wonder" plastics—soon may move with more vigor into the synthetic-fiber market. Both Italy's Montecatini and Institut Francais du Petrol recently have developed successful methods for preparing polypropylenes for conventional dyeing: The Italian company has exhibited brightly-hued fabrics made of the staple and yarn; the French report that their technique permits fibers and fabrics to be vat- and spun-dyed in the full spectrum of basic and acid colors. Chemical Engineering, Oct 19, p 98)

India Shops for Its First Power Reactor

The world's reactor manufacturers by the end of the year will have a chance to bid on India's first atomic power reactor, a 250-Mw plant to be built on the coast near Bombay. The $90-million plant is scheduled for completion in 1964. Two other reactors will be built as part of India's third 5-year plan, ending in 1966. Power at the Bombay plant will cost about 8 mills/kwh at the outset, 4 mills after 5 years. (Nucleonics, Sept, p 30)


How machines retrieve information...
Orbiting satellites now are being used to measure densities in the upper atmosphere
TITLE
ABSTRACT
Keywords are selected from manuscript...
... coded and punched onto cards...
...which go to Data Processing Machines...
... a reservoir of information for researchers asking "keyword" questions.

Speeding

Machines can help find the answers you need from today's mass of literature.

MACHINES that have proved their value in engineering and commerce now are being put to work in the library—in the mechanized collection, storage, and retrieval of technical information. Data-processing machines already are doing this work in scores of U. S. laboratories and industrial plants, and they are being tested and put to work in Europe, Japan, the Soviet Union.

In essence, what these machines do is to index on punched cards and tape a series of "key" words that can lead a researcher to useful articles and documents (drawing at left). When a researcher wants information, he addresses his inquiry in similar keywords, and the machine pops out cards that give him literary references or abstracts of articles.

The experts — mathematicians, linguists, computer makers—say this is only the beginning. On the horizon, though several years away, are machines that will actually read, abstract, store, and then find and reclaim needed literature.

• **Mountains of Paper**—What has pressed data-processing machines into service is the size and complexity of the job, the mountains of paper that have come as a by-product of the world's research and industrial progress. Estimates show that the aggregate of technical literature today has doubled itself in the last eight or ten years.

The basic problem: What to do with this flood of potentially useful information as it flows into a company, a trade association, into libraries and universities. And, more important, how to find the research answers you need, when you need them, from this imposing accumulation of documents, articles, books, internal corporate reports.

A research project normally begins with a review of the literature in the field. But this has become increasingly difficult or impossible, as articles and reports pile up. Several companies have found themselves in the embarrassing position

the Search for Technical Data

of spending huge research sums on a given project, then discovering that the same subject had been previously researched.

• **World Experts Meet**—The urgency of the problem was underlined at two recent high-level meetings in the U.S.A. Western Reserve University and Rand Development Corp. brought together a group of 200 persons from 10 different nations in the first "International Conference for Standards on a Common Language for Machine Searching and Translation." On the agenda was an over-all analysis of the problem, suggestions on more efficient pooling of technical information, closer international cooperation, reports on what different countries were doing on machine-retrieval of information.

The second meeting, sponsored by International Business Machines Corp., more specifically focussed on what is being done in the field by machines and machine methods. In a three-day closed conference, experts discussed their methods of coding and abstracting, and demonstrated the machines now being used for speedily retrieving information stored on cards, tape, and magnetic drums.

• **Machine Retrieval**—In any typical machine system, a document analyst (librarian or research worker) first reads the document and selects keywords that identify the subject matter. The keywords are coded, and the codes punched on cards. Each article or other document goes on a single punched card, which has room for hundreds of keyword codes, as well as a coded identification of the document.

When a researcher wants information, he phrases his question in similar keyword codes. A data processing machine searches the library of cards for those punched with the desired code, and releases these cards for the researcher's use.

Such systems are bringing order to many private and public research organizations. A big petroleum company uses one to select from a file of 70,000 articles and 30,000 patents in a matter of seconds. A pharmaceutical company stores its massive chemical and medical data on punched cards. Needed information then is speedily retrieved by feeding the machine the code of any important noun—a clinical symptom, a drug, a chemical compound, a test method.

Machine retrieval has revolutionized the principles of information storage. The conventional library method of indexing according to title and subtitle—which inevitably retrieved much unwanted material—has been superseded by coordinate indexing of keywords.

This can mean indexing by dozens or hundreds of keywords, rather than by two or three subjects or titles. A quicker and more efficient retrieval of desired information is effected. An article on "Artificial Satellites in Orbit," for example, might be encoded with such keywords as "satellite," "orbit," "artificial satellite," "atmosphere," and any other significant word that appears in the text. The article can be brought back from storage by feeding any one of these keywords into a data-processing machine.

Any company that has key-punching and data-processing equipment can adapt them to information retrieval. All that is required is a qualified man to convert the key terms of a paper into a numerical code. In many applications, the information on the punched cards is transcribed onto tape or a magnetic drum for more convenient storage. Some companies put a written abstract on each card, and still others use microfilmed literature keyed to their coded cards.

• **Automatic Abstracting**—Experts see the day when even the document reader will be eliminated. Machines now are available that can "read" the complete text of articles once they have been coded onto punched tape. These machines can be programmed to throw out unimportant prepositions and conjunctions, tabulate the repeated words that define the article, and supply an abstract based on these keywords.

It has been suggested that these abstracting machines, still under long-range development, could be supplied with punched tape that is now going to waste in printing plants. That way, articles might be mechanically abstracted even before they appear in print. Some scientific literature today is punched onto paper tape that feeds automatic linotype machines. This tape is machine-readable, and could be the input for an automatic abstracting and storage system.

• **Pooling of Information**—Advances in machine retrieval are only one phase of a bigger problem. Most companies using these machines are large, and they have a major problem in just keeping track of their own internal reports and incoming documents pertaining to their special operations. But smaller firms—and many big companies—often have a need for borrowing information and pooling document resources.

Allen Kent and his associates at Western Reserve University have attacked this problem by proposing a central information collecting and processing agency. Such an organization might be set up in the U.S.A., but it would aim at translating and compiling all of the world's scientific and technical literature, and make information available for all who subscribe to or pay for such a service.

Western Reserve already has begun a pilot experiment of this kind covering metallurgical literature. Pertinent information is being selected from the world's current literature and sent to subscribers only weeks after initial publication.

The program for all technologies, Kent estimates, would mean an investment of $36-million over a period of ten years, though the service would eventually become self-supporting. The center's revenues would come from companies and organizations wanting continuous information in their fields, from answers to specific inquiries etc.

The information center would also support existing services, and it would work closely with companies using machines for information retrieval. Copies of coded media would go out to these companies, so that they could make their literature searches mechanically and add the new data to their tape or punched-card files.●

Devices Look and Listen

Versatile trouble detectors now keep plants running, improve product quality, guard against danger.

THE WISE FACTORY MANAGER learns how to spot trouble before it happens. An ever wider assortment of devices are becoming available to warn him of approaching machine or process failure. Some come with original equipment; others boast a broad range of applications, and must be adapted to a factory's particular needs.

These trouble detectors save money in reduced plant maintenance. They also assure higher factory output, better product quality, fewer rejects, and a safer plant for workers and supervisors.

Detectors can serve specialized purposes, such as warning of electrical, temperature or pressure failure, or they can be multi-purpose instruments that detect any combination of measurable troubles. Here are some of the types of equipment available, selected from the hundreds reported by *Factory* magazine in the past four years:

Production Trouble Detectors. These devices check whether a machine is functioning as designed. They warn if parts are sticking, if tools break, if the machine is overloaded, or if the feed mechanism jams.

Some production detectors use photocells to monitor parts-ejection delivery and tools. Others watch out for motor overload, a variation in feed or flow, or any variation in a process cycle.

Mechanical Trouble Detectors. These give a warning of failure that results from wear, misalignment, or imbalance. They measure such things as vibrations, sound or heat, which often are the symptoms of wear and breakage.

Many of these devices work through auditory or electronic sensing units. They are available in portable or stationary models.

Electrical Fault Finders. Electrical companies have provided valuable monitors and controls for protecting power supply and equipment from current changes or failure. Most of these devices are wired into a power circuit, but some can be used for portable checks.

Electric trouble detectors are used to check overloads, short circuits, phase failure, load changes, excess power consumption. Voltage and amperage are monitored by electrical, magnetic, or electronic means.

Temperature and Pressure. Extremely accurate instruments are available for detecting heat or pressure changes. Some merely sound warnings, but others shut down equipment or take corrective action.

Many temperature detectors work by thermostats, thermocouples, or fusible elements. Others operate on the pyrometer principle, gaging temperature by radiation given off by a warm body.

Pneumatic and electronic devices are used to detect upward or downward changes in hydraulic, gas, or vacuum systems. They can stop machinery when lubricating pressure drops below a setting, insure a full crankcase of petroleum, regulate pressure in gas lines, and monitor resistance in ducts, filters, fans.

Multi-Purpose Detectors. These devices usually are more complex than those already discussed. They centralize the job of spotting trouble before it happens.

Typical systems monitor temperatures, pressures, feed and flow rates, electrical variations, and other variables, and route this information to central control. A light, bell, or siren signals a dangerous condition.

The more elaborate of these systems also continuously record the operation and performance of various units in the plant. And most instruments that can indicate and record can be made to control—shut down a motor, increase a feed, raise or lower pressure. (*For details of U. S. equipment mentioned above, write to* INTERNATIONAL MANAGEMENT DIGEST, 330 *W. 42nd St., New York* 36.)

Building Strength into Beauty

LAMPS above ceiling offer a soft, appealing light through plastic panels.

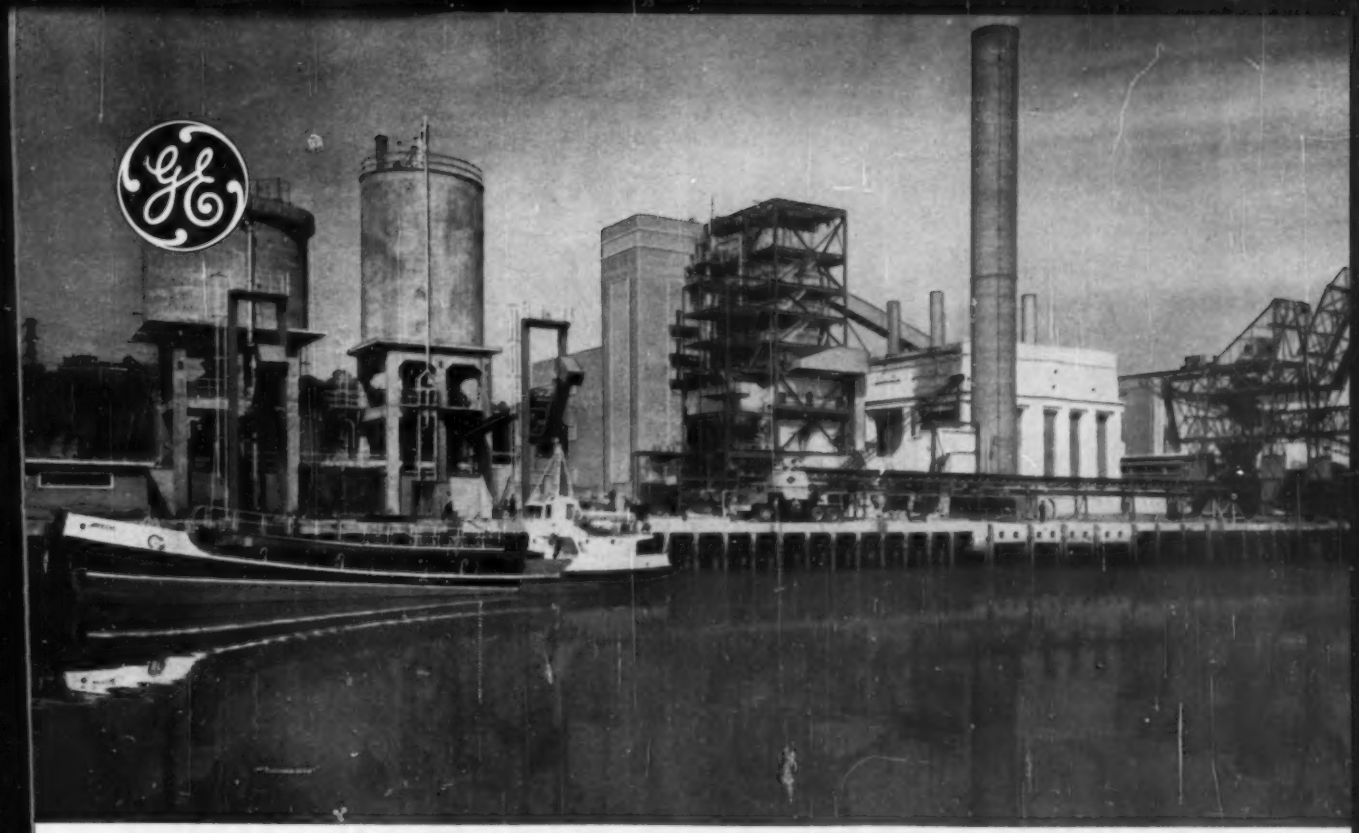
PLASTICS are moving into the building industry from many directions. The latest application to appear is in the form of translucent panels made by sandwiching a variety of decorative core materials between skins of reinforced plastic. Architects say they combine utility and beauty for curtain walls, doors, room dividers, and dropped ceilings (picture above).

A typical panel, made by U.S.A.'s Reinforced Plastics Corp., uses cores of curled wood, cardboard tubing, or industrial honeycomb housed between layers of glass-reinforced polyester. The result is a panel that transmits 50% of available light in a soft, diffused fashion. The color and shape of the core material offers a variety of color patterns.

• **No Loads**—Though not built to carry loads, the panels are sturdy enough to withstand winds of hurricane force. They are also shatterproof and non-corroding, and the dead space surrounding the core material offers good insulation and soundproofing.

Reinforced Plastics' panels are built in layers, starting with a bottom polyester skin. Some of the same resin is used to bond the core material to the skin, and then a top layer of polyester is put in place. The assembled parts are cured into a single, bonded unit in a flat press using heat and pressure.

The panels are made in varying thicknesses up to 4 cm with wood and cardboard cores, and up to 10 cm with honeycomb. Panels as large as 1.2 by 3.3 meters have been made. They are installed as quickly and easily as panes of glass, by glazing or other simple techniques. (*Modern Plastics, Sept, p*88)



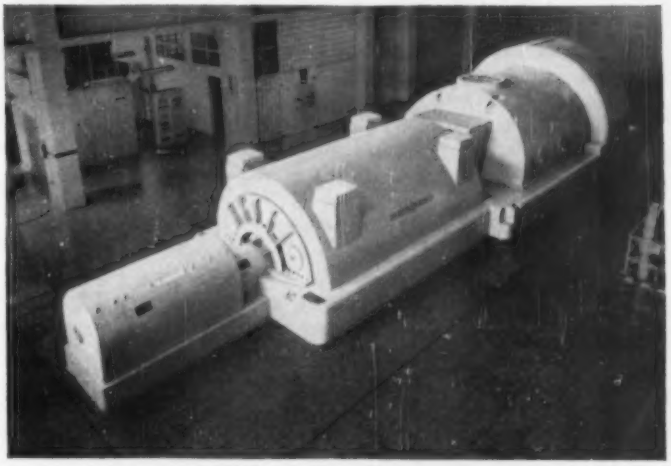
GENERAL ELECTRIC SUPPLIES ELECTRICAL EQUIPMENT FOR EXPANSION OF SPAIN'S BURCENA STEAM POWER PLANT

Iberduero, S. A., Centers Expansion Plans Around New G-E Steam Turbine-Generator

The rapid growth of Spanish industry during the past decade has created an increasing demand for electric power throughout the country. Much of this additional power must come from Iberduero, S.A., the largest power company in Spain. To meet these growing demands, Iberduero, S.A., embarked on an extensive program of expansion.

At its Burcena Steam Power Plant near Bilbao, the utility appointed General Electric as prime contractor to supply all the electrical equipment and all the mechanical equipment to be imported for the expansion. The key component in the system is a new General Electric 50-cycle steam turbine-generator, rated 66,000 kilowatts. In addition, G-E auxiliary transformers, switchgear, and other equipment are combined into an integrated system providing maximum reliability and economy of operation.

Let General Electric's long experience in the electric utility field help you with your own power expansion program. For complete information, contact your nearest G-E representative, or write: *International General Electric Co., Dept. 59-7, 150 East 42nd St., New York 17, N.Y., U.S.A.*



General Electric's 50-cycle steam turbine-generator is the key unit in the Burcena extension. It is rated 66,000 kilowatts with initial steam conditions of 1450 psi, 1000°F and reheat to 1000°F.

GENERAL ELECTRIC

—U.S.A.—

MODEL made of treated wood holds the fire, while the untreated structure bursts into flames with its contents.

Wood Takes the Place of Steel

WOOD soon may be competing with steel again in supplying the structural framing for many industrial and commercial buildings. This is being made possible by new processes for pressure-impregnating lumber with chemicals so that it can withstand flame and intense heat (photos above).

Insurance underwriters recently have given their stamp of approval to two such processes in the U. S. A., developed by Koppers Co. and Protexol Corp. In tests by Underwriters' Laboratories, Chicago, both processes have shown that they can improve such woods as pine and fir so that they are "essentially noncombustible."

Many industrial cities now are revising their building codes in keeping with these and related findings. New York City, which has an extremely strict building code, now is allowing treated wood in place of steel for versatile commercial buildings. The first building erected under the revised code is a large warehouse built for Cross, Austin, & Ireland Lumber Co., a company making treated wood under Koppers' license.

• **Stronger than Steel** — Buildings of treated wood actually are stronger than steel framework in the 700-950 C heat of a raging fire. In such intense heat, steel loses most of its structural strength and has a tendency to buckle. Treated wood, on the other hand, chars but retains its strength, even when exposed to direct flames for an hour.

Treated wood resists heat because of the action of the chemicals impregnated into its surface to a depth of 1.5 to 2.5 centimeters. These chemicals — generally ammonium sulfate and phosphate, boric acid, borax, and other salts— provide a variety of reactions to protect the wood from combustion. They generate non-inflammable gases, fuse a glaze on wood fibers, then react with the wood and heat to form a dense, nonporous layer of char over the wood surface.

• **Cost Advantages** — Treated wood not only is cheaper than steel, but it costs less to erect and less to maintain. Construction can be done by a team of carpenters, with the aid of a heavy-duty crane. This eliminates the variety of high-priced specialists, hoistmen, riveters, or welders normally seen on a construction job.

Impregnation of the wood with chemicals protects it against weather and deterioration as well as against fire. Treated wood can be painted and finished as effectively as untreated wood, but it requires little or no repainting.

• **Wood Treatment**—The detailed processes of Koppers and Protexol —their formulations, as well as the pressure, temperature, and duration of treatment—are trade secrets. But the general process is reported to follow traditional methods of treating wood with chemical preservatives in vacuum-pressure vessels.

Kiln-dried lumber is placed in a vessel, which is then evacuated to fully de-aereate the wood. A solution is piped into the vessel until it has filled all available space. Hydraulic pressure forces more solution into the vessel and below the surface of the wood.

Proper impregnation depends on using the right kind of wood, and sufficient heat and pressure, probably about 3.5 to 17.5 kilograms per square centimeter. Hard woods and those with high oil content are difficult to treat, but such woods are not important for structural purposes. (*Chemical Week, Oct* 17, *p*59)

VIP*

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A man's ability to grow, his job satisfaction,-his performance for you . . . yes, your company's future earnings . . . are all intimately related to the amount of practical, profitable information he is continuously absorbing, and putting to use in his daily job. Today, demands are such that a successful man must be better informed than ever before . . . and successful men make successful companies. This is why the McGraw-Hill V I P Program of "engineered" business reading will give you so much personal satisfaction in your plans to move your company forward. If you are concerned with man-power development, you will want to read this new booklet, learn from other leaders now using this program. Write for your personal copy. . . .

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Technical Aid from a Camera

PHOTOGRAPHY is playing a larger role in industry. Ten years ago a company photographer (if the company had one) spent most of his time doing publicity and promotional work. Today many of them act as technical consultants. They are engaged in such things as matching petroleum samples, measuring the stress in metal parts, analyzing the movements of high-speed machinery.

Production men have discovered that they really don't know their process until they see the details of its operation on film. A glass manufacturer, for example, could not find out what was causing a glass bubble in one of its moldings until a high-speed camera showed that the shears cutting the continuous stream of glass were bending the stream double to form an air pocket.

• **Improvements** — Technical developments have been increasing the value of photography in industry. Among them are faster films that permit picture-taking in ordinary light; high-speed motion pictures; cameras that snap and print a picture in a minute—and such cameras soon will be available for making quick color prints.

Faster films also have been enabling amateurs to act as industrial photographers, without the aid of expensive equipment. A U. S. railroad now equips its engineers with quick-printing cameras, so that they can make an immediate record of any damage to equipment during uncoupling and switching operations.

Many industrial applications, however, call for the skill of a professional photographer. These include such complex jobs as "stopping" a machine with a high-speed camera, photographic studies of an object in a liquid, and time-lapse photography that can record a sequence of changes in a process. (*Business Week, Oct* 17, *p*85)

Two Methods for Faster Printing

FASTER offset printing is offered by new techniques developed independently by Belgium's Gevaert Photo-Production N. V. and U. S. A.'s Eastman Kodak Co. Both companies have found new ways of making the master plates from which inked images are "offset" on to rollers that print the copy.

Making a master plate normally takes 45 minutes or more. Gevaert's process cuts the time down to a minute, without any sacrifice of quality, by use of a new type of aluminum plate. A negative is exposed to the original copy, and then the unexposed salts on the film are transferred to the aluminum in a special unit resembling a photocopy processor. The plate can make 10,000 copies.

The Eastman system uses a paper master instead of aluminum, and special chemicals. It can produce 1,000 to 2,000 copies from a single master. The paper master, however, can be used to make up to 10 conventional photo-copies instead of the single offset master. (*Business Week, Oct* 24, *p* 168)

Cimex

MODERN FLOOR CLEANING METHODS

the scientific, technical and mechanical approach to the problems of Industrial Floor Maintenance that has produced remarkable results.

Photograph by courtesy of OSLO LYSVERKER Oslo, Norway.

Here is a current example:
The offices of the OSLO Electricity Supply Company cover 10,000 square metres. Until recently the linoleum covered floors were cleaned with soap and water by a staff of 45 women—but results were not satisfactory. Five Cimex 'Vultures' and one 'Dipper' were purchased and Cimex cleaning methods introduced. The floors are now scrubbed only once a year, but are polished with 'Vultures' twice a week and cleaned daily with a damp mop to remove dust and scuff marks, emulsion wax being applied only when necessary. The cleaning staff has now been reduced to 22 women each of whom spends only 3 hours a day on the floors. The results of the first year's work are impressive—a saving of £4,250, the appearance of the floors first-class, while the work is easier and the cleaning staff happier.

The above case is typical of the results obtained by Cimex equipment used in conjunction with Cimex cleaning methods and is happening in factories, offices, stores, hospitals etc. throughout the world.

May we have the opportunity of showing what we can do for your floors?

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TROJAN GETS ITS SEA LEGS

TROJAN
YALE & TOWNE

...outclasses all other tractor shovels for principal job of barge unloading at concrete pipe plant...

"We tried out six loaders before we bought our Trojan," says Ralph M. Simpson, plant superintendent, Seattle Concrete Pipe Company in Seattle, Washington.

REPLACES TWO MACHINES

After landing the job of "handy-man," the Trojan went on to prove it could easily take the place of a crane and truck in the unloading of barges and distribution of material—and do it more efficiently, more economically. Its fast cycle operation proved invaluable as this major change was made in the handling of incoming materials.

ANOTHER PAT-ON-THE-BACK FOR TROJAN

Mr. Simpson goes on to say, "Not only does the Trojan serve us well in its primary job of barge work, it moves material all over the yard, clean ups, moves other equipment and even levels ground. We tried them all and judged the Trojan best for the job."

BEST BY TEST

This is one more example of Trojan's ability to outwork other machines. Ask your distributor . . . he'll be glad to demonstrate its outstanding versatility on YOUR job.

Here, on board the barge, the hard-working Trojan picks up another load of gravel for transportation to the stockpile area.

AD NO. 44-60

The Trojan line includes six models with lifting capacities from 5,000 to 24,000 lbs. and bucket capacities from 1 to 4 cu. yds.

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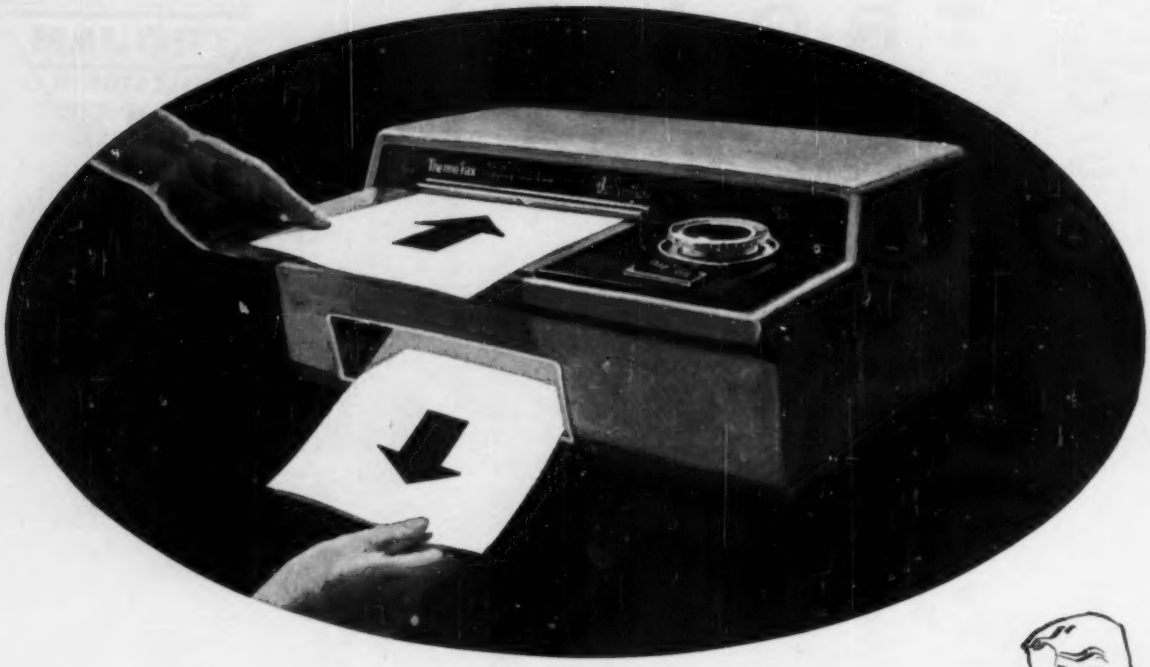

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Just place a sheet of "Thermo-Fax" Copy Paper on the original—whether written, printed, drawn, or typed—and insert into machine. The "Secretary" Copying Machine gives you back your original and an error-free, clean, sharp copy in just four seconds. Efficient, economical—the perfect method for letters, orders, invoices, work-sheets—in fact, all the material you most often want copied. This new model of the famous "Secretary" Copying Machine is all-electric and can be plugged into any outlet.

For free illustrated booklet entitled "Electric . . . and so are the Results" write Minnesota Mining and Manufacturing Co., International Division, 900 Bush Avenue, St. Paul 6, Minn., U.S.A. Dept. S.

The "Secretary" Copying Machine, like the thousands of other products made by Minnesota Mining and Manufacturing Company, is designed to meet the needs of modern business. A program of continuous research insures the highest quality as well as a constant flow of new products. Good reasons to *always* look to 3M—*first*.

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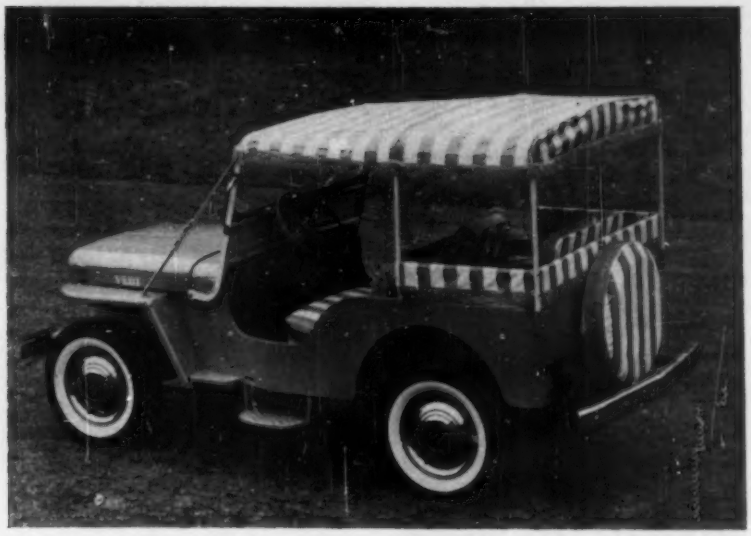

Jeep Gets Glamorous Facelifting

This pastel-colored, fringed Jeep Surrey, aimed at the resort trade, is a far cry from the unglamorous little khaki vehicle that has been a familiar sight since World War II. Its vinyl-coated fringed top and seats in candy-striped colors (matching the body), its continental tire mounts and two leather straps from windshield to front fender (a decorative touch borrowed from early touring car models) make the Surrey chic—if a Jeep can be chic. But it retains the well-known lines of all the Jeeps.

The four-passenger, 60-hp, four-cylinder Surrey (claimed to be the cheapest U. S.-built passenger vehicle) is one of the many adaptations of Willys' 10 basic model vehicles. These models, with four-wheel drive and power take-off, are converted into hundreds of specialized cars to meet customers' requirements. In the case of the Surrey, the special market is the booming resort, vacation and estate trade around the world. Hotels, car rental agencies, and the like are expected to be the biggest customers. *Willys Motors Inc., Toledo, Ohio, U.S.A.*

Computer for the Small Business

Both in size and price, the IBM 1401 data-processing system is a new step toward bridging the gap between calculating machine and large computer. Basic elements are a processing unit, a card reader-puncher, and a printer. Up to six magnetic tape units can be added to increase its capacity. The processor performs arithmetic and logic functions and controls the other units. Its magnetic core memory can store up to 4000 bits of information. The 1401 does over 3000 additions a second—faster than many calculators but slower than most computers. The card unit can punch 250 cards a minute and read 800. The entire system can be operated independently, in conjunction with punched card equipment, or as an auxiliary to IBM high-speed computers. *IBM World Trade Corp., 807 United Nations Plaza, New York 17, N. Y., U.S.A.*

Pleats Wool Permanently

A new finish for giving durable creases or pleats to wool is claimed to be entirely different from any other known process. The finish is applied by the cloth finisher, but the tailor himself makes the wool permanently pleated by a special pressing technique used on the completed garment. The process, known as the "Immacula" finish, needs no special plant or chemicals. *Proban, Ltd., 127 Royal Exchange, Manchester, England.*

Water-Soluble Varnishes

Two German companies have developed water-soluble varnishes. Compared to conventional varnishes containing organic solvents, the new varnishes have several advantages: Water is cheaper than organic solvents and eliminates the danger of fire, and any wasted varnish can easily be retrieved. Also, water-soluble synthetic resins have unusual adhesive properties, even on aluminum, so that very thick first coatings are possible. *Dr. Kurt Herberts & Co., Wuppertal,* and *Reichold-Chemie AG., Hamburg, Germany.*

Flexible Intercom System

A new, highly flexible intercommunications system serves as an inter-office party system or as a confidential link for individual conversations. By pushing the proper buttons on the master unit, an executive can conduct staff conferences without calling his colleagues away from their desks. Calls cannot be interrupted by a third person: The caller has to wait until a signal light shows the line is no longer in use. *Radio Corp. of America, 30 Rockefeller Plaza, New York 20, N.Y., U.S.A.*

Panoramic Camera

A new camera developed in the Netherlands photographs nearly the whole of the surroundings (355°) in a single exposure. This is made possible by a special lens at the top of the camera that allows light to enter at the side at an angle of 340°. The film is mounted round the lens at an angle of 360°. Because of two small guide rollers, it is only over an angle of 5° that no exposure is obtained.

Shutter speeds are 1/25, 1/50, 1/100, and 1/250 of a second; the f number of the lens is 8; focal length is 10 cm. The camera uses ordinary miniature film 30 meters long and has an image size of 2.4 × 62 cm, so that some 45 photographs can be taken with one film. It can be worked both manually and automatically. Weight is 11½ kg. *N. V. Optische Industrie "De Oude Delft", Delft, Netherlands.*

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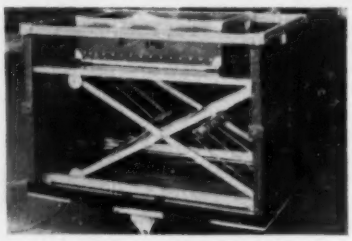
MORE PRODUCT DIGEST

"Plastic Surgery" for Cars

A Japanese company has developed a polyester plastic body that can be fitted over the chassis of an old car. Cost of overhauling will run from $500 to $700 for a smallish automobile. The plastic body itself weighs about 30% of comparable conventional metal body styles. *Tenryu Industrial Co., No. 1, 4-Chome, Koa-machi, Soharacho, Inaba-gun, Gifu, Tokyo, Japan.*



Ends Bending Fatigue

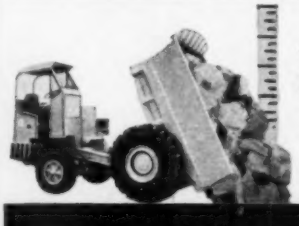
The "floating bottom" of this hand truck keeps the contents continually at waist level for fast loading and unloading. There is much less operator fatigue, less chance of personal injuries. The "Unilevel" truck bottom, supported by torsion springs, moves up or down depending on weight of load (max. 2 kg). *Nat. Vulcanized Fiber Co., 1000 Beach St., Wilmington, Del., U.S.A.*

Electronic "Hand"

TransfeRobot is an automatic operator described as "an electronic and mechanical version of the human hand." It can be used in line with fabricating or assembly machines for production-line functions. *U. S. Industries Inc., Robodyne Div., 250 Park Ave., New York, N. Y., U.S.A.*

Joins Foil Ultrasonically

Packaging manufacturers will welcome a new ultrasonic welding machine, Sonoweld, that joins thin aluminum sheet at over 15 cm/sec. Application of high-speed sound waves to modified seam welding allows fast welding without burning through the parent metal. *Alcoa, 1200 Alcoa Bldg., Pittsburgh 18, Pa., U.S.A.*



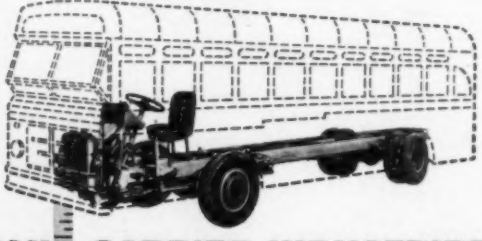
Customized Mobility

This rock hauler and the bus chassis shown below are examples of both the breadth of Crane Carrier Industries' capabilities, and its ability to provide customers with the *special* kinds of mobility needed for their specific operations.

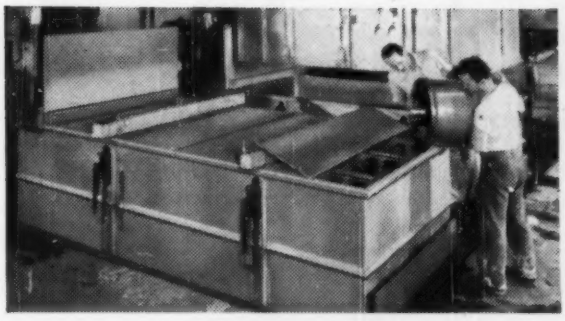
To date, Crane Carrier Industries have designed and built over 300 different types of vehicles for power cranes, concrete mixers, drill rigs and dozens of other machines. They are manufactured in the United States, Canada, Netherlands, and Australia to best serve customers all over the globe.

TELL US your needs. Consultation costs you nothing, and may provide a profitable answer to your special mobility problems. Write direct.

Licensee Assembly Franchises are available in many parts of the world. Complete design and engineering service; package component shipments provided for local production. Write for complete information.



CRANE CARRIER INDUSTRIES
Export Division, Toronto, Canada



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As a material for product and processing equipment, ENDURO provides great resistance to heat, corrosion and abrasion. It has an easy-to-clean, lustrous, sanitary surface—solid stainless steel—with nothing to peel or chip off. Its high strength frequently permits reduction in weight.

As a material for decorative uses, ENDURO offers an attractive silvery color in various finishes which harmonize with any color or structural material. It is strong. It is easy to clean and to keep clean.

Republic ENDURO® is easy to fabricate by all modern methods. You can stamp, draw, spin, bend, form, weld, solder, emboss, etch or otherwise work it to meet your needs. It is available in sheets, strip, bars, tubing, wire and many other forms.

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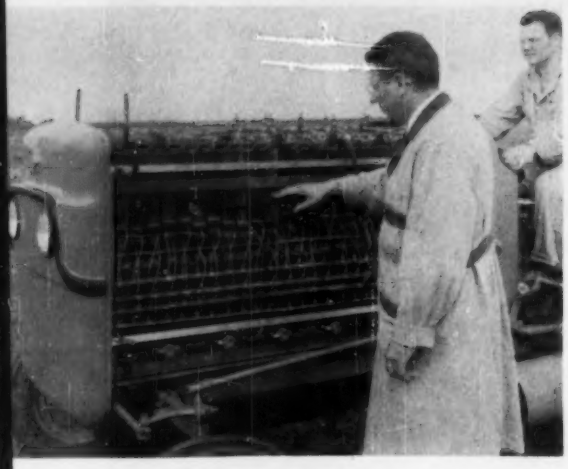
REPRESENTATIVES IN PRINCIPAL CITIES OF THE WORLD



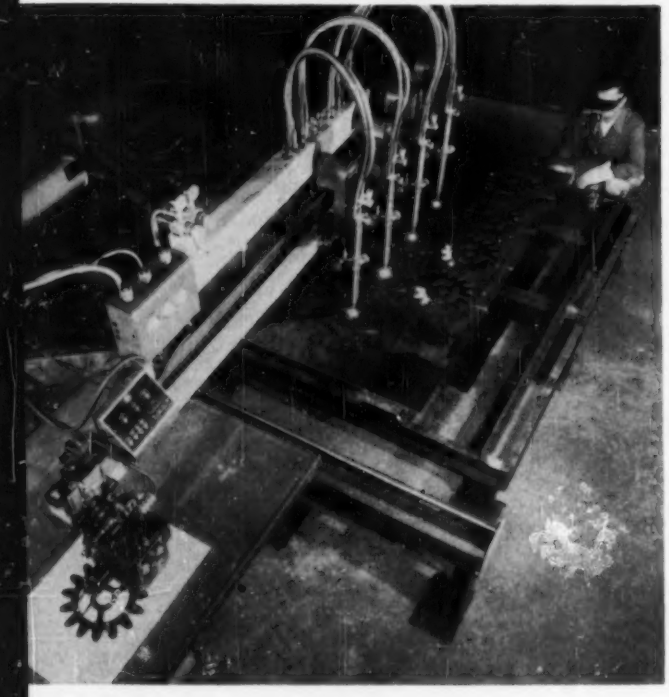
Fuel Cell Powers a Tractor

This experimental tractor—shown a few weeks ago by Allis-Chalmers, of the U.S.A.—gets its 20 hp from 112 nine-cell units, instead of the conventional gasoline engine. The experiment typifies the hopes that researchers are now holding out for fuel cells (IMD—Nov, Sept).

The tractor's battery develops more than 1350 kg of drawing power. Power comes from propane and oxygen. The propane is fed into the cells by a system of tubes. Once in the cell, it reacts with the electrolyte. The reaction is helped by a catalyst (still a company secret) that is coated on the electrodes. As the propane flows through the system and brings on the electrochemical reaction, direct current is picked up through the electrodes and then fed through bus bars (the bright, horizontal bars in the picture) to a compact controller near the driver. This regulates the tractor's speed by governing the amount of current reaching the motor. *Allis-Chalmers Mfg. Co., Milwaukee* 1, *Wis., U.S.A.*

304 Km/Hr Business Plane

This four-seater private plane is the latest to come off the drawing boards of one of the U.S.A.'s largest manufacturers of business aircraft. The Model 210, as it is called, is a single-engined monoplane with a top speed of 318 km/hr and a cruising speed of 304 km/hr at 75% power when flying at 2100 meters. Chief features are unusual stability (achieved by special wing and tail design) and fully retractable landing gear. The plane is powered by a 260-hp Continental engine with fuel injection. There is a choice of colors for the exterior (which has a three-color pattern), as well as for the inside. *Cessna Aircraft Co., Wichita, Kansas, U.S.A.*



"Pantograph" Gas Cutting Machine

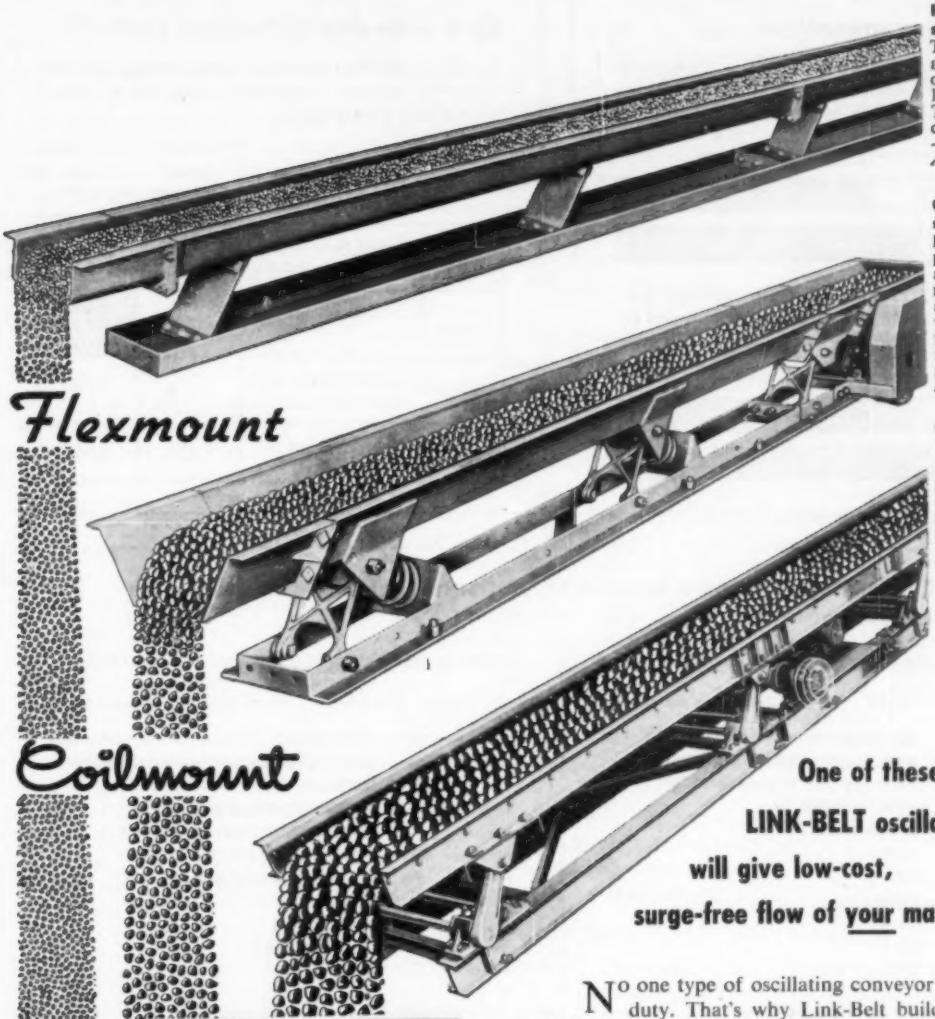
Unusually accurate and dependable metal cutting is claimed for this new oxygen cutting machine. The machine uses the Pantograph system of motion: Cutting torches are suspended on freely moving pantograph arms, which in turn are mounted on a separately powered carriage. The electronic tracing device that follows the outline of the pattern or template moves only the pantograph arms. The system makes for precision, and provides a friction-free mechanism that is maintained throughout the life of the equipment because all bearing surfaces are totally enclosed.

The machine cuts steel plates up to 2.4 meters wide, of any length, and up to 30 cm thick. It uses 110 a.c. and surprisingly little power.

Briefly, here is how the cutting is done: A tracer projects a beam of light on a black template with a white ground. A photocell scans the edge of this template and steers the tracer wheel around the outline of the object to be cut. At the same time, the oxygen jet pierces the work and cuts the matching part out of steel.

The two tables, one for tracing and one for cutting, are mounted on the same rails to save space and give maximum rigidity. The operator has all the controls he needs near at hand. *Airco Co. International,* 150 *East 42nd St., New York* 17, *N.Y., U.S.A.*

Any density-any capacity



Flexmount for light duty service uses leaf springs. These oscillating conveyors are ideal for gentle handling of free-flowing materials in lighter duty applications. They're fabricated in widths of 8, 12, 18 and 24 inches —with 4-in. deep troughs. *Available from stock.*

Coilmount for medium duty service uses coil springs Designed for moderate applications handling mildly abrasive and bulk materials. Coilmounts are available in 10 and 20-inch widths with 6-inch deep troughs. They are shipped in assembled sections, making installation costs low. *Available from stock.*

Torqmount for heavy-duty service uses torsion bar springs. Engineered for severe service where capacities run as high as 500 tons per hour. Torqmounts are rugged, dependable . . . require little maintenance. Trough is easily replaced . . . simply remove bolts securing it to channel frame.

One of these 3
LINK-BELT oscillating conveyors
will give low-cost,
surge-free flow of <u>your</u> material

No one type of oscillating conveyor is good for all types of duty. That's why Link-Belt builds a complete range of oscillating conveyors for all operating conditions and materials.

Only Link-Belt offers three different design units . . . each engineered for a specific type of service. Their design is the simplest in the oscillating conveyor field and each functions as near to NATURAL FREQUENCY as possible to minimize power requirements. And Link-Belt FULL-TIME POSITIVE ACTION controls the load at all times . . . assures continuous, uniform flow of materials regardless of surges.

For the best in light, medium or heavy-duty oscillating conveying, call your Link-Belt representative and ask for Book 2744. Or write us direct.

LINK-BELT

14,050-E

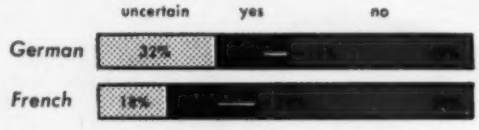
OSCILLATING CONVEYORS

LINK-BELT COMPANY: Engineers • Manufacturers • Exporters of Machinery for Handling Materials and Transmitting Power • Established 1875.
EXPORT DIVISION: Dept. 1259-IMD, 233 Broadway, New York 7, U.S.A., Cable Address: Linkbelt—New York • Australia, Marrickville (Sydney) • Brazil, Sao Paulo • Canada, Scarboro (Toronto) • South Africa, Springs • Representatives Throughout the World.

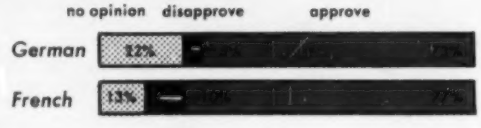
A unique survey of French and German consumers reveals...

❶ A protective nationalism...

Should Germany/France encourage companies from the U.S.A. and other countries to locate plants or subsidiaries in our country?



Should Germany/France insist that foreign subsidiaries in our country be at least half owned by German/French capital?



❷ A preference for national products...

Here is a product example using wholly fictitious company names. Consumers were asked which they would prefer to buy.

Preference of...		French Consumers	German Consumers
French	Société Parisienne d'Articles de Toilette	[illegible]	2%
German	Toilettenartikelwerke Köln	1%	[illegible]
American	California Soap and Lotion Company	5%	1%
	Other; no choice	8%	49%

❸ But when the consumer knows a brand well, nationality of brand loses its discriminatory importance.

German consumers' brand preference for gasoline

Brand		Familiar With Brand	Would Definitely Consider Buying
A	American	77%	59%
B	Dutch	76	63
C	American	72	57
D	British	51	29
E	German	37	19
F	German	29	12
G	American	23	9
H	German	18	11
I	Italian	7	4
J	American	6	4
K	American	1	2

French consumers' brand preference for gasoline

Brand		Familiar With Brand	Would Definitely Consider Buying
A	American	92%	[illegible]
B	Dutch	91	78
C	French	77	61
D	British	73	55
E	French	72	63
F	American	67	51
G	French	66	46
H	French	38	28
I	American	36	22
J	Italian	36	28
K	American	7	9

How Nationalist are the Consumers?

"FOREIGN INDUSTRIAL CAPITAL is welcome in the European Economic Community and is assured of fair treatment on an equal basis with that of member nations." Such words have been uttered by many EEC leaders. And they are sincere.

But economic nationalism cannot be wiped away overnight. The tables above reveal that it exists in at least two of The Six. How such sentiments affect foreigners operating in these nations, and how they affect sales of foreign-brand products, is of concern both to Europeans and to all who do business with them.

• **Survey**—To find out more about European consumer attitudes, the U.S.A.'s Opinion Research Corp. sponsored, for its clients, a confidential study in Germany and France earlier this year. It was conducted with the help of International Research Associates, and began with preliminary interviews with U.S. and European executives, and with European consumers. There followed depth interviews with a sample of over 700 Germans and French, all of them articulate people of middle and upper income.

The survey found that approval of EEC was growing, and among the French especially. Yet opinion in both countries feared foreign competition for their industries. The French sample worried most about autos, iron and steel, textiles, optical equipment (in that order); the Germans, about machinery, textiles, iron-coal-steel, and farming.

• **Protection** — To protect these

and other industries, over two-thirds of those interviewed thought there should be restrictions on non-EEC companies. For example, they should be forced to invest part of their profits in public projects (like housing); or they should be forced to employ only nationals. (But note that American companies were considered by a majority to be well-paying and innovation-minded, and most persons would encourage a family member to work for a U.S-owned company.)

When the study got to questions about foreign versus domestic products, there was a decided preference for the domestic—but only when there was no other criterion to go by. The researchers started by asking which of a group of wholly imaginary companies the person would patronize for toiletries, gasoline, detergents, appliances, etc. Most preferred the company that seemed to have a national name (see example on facing page). But once there were established standards, nationality seemed to make little difference.

• **Brand Buyers** — The French and Germans interviewed revealed themselves as brand purchasers, saying they preferred to buy brands they have used or have heard about. Rarely did foreign origin of a brand enter as a reason for rejecting that brand. Foreign brands that rated poorly were simply those that were unfamiliar—and unfamiliar domestic brands fared poorly too.

Once a brand has become familiar, national origin is forgotten (if it was ever known). Only 29% of the Germans knew that one of their popular autos was made by a U.S.-owned company; only 9% of the French knew the toiletry they preferred was U.S.-owned.

• **Stereotypes**—Finally, the study revealed the strength of national stereotypes toward this or that nation's products. The outstanding characteristic of U.S. products appeared in the survey to be practical, pleasing packages, with good quality a close second. Both French and Germans agreed that German products were built to last (but the French sample thought German products lacked taste and delicacy). And French products were seen as smartly styled and in good taste. ●

Industrial Advertising . . .

. . . can play an important sales role. Here is how to measure its effectiveness.

INDUSTRIAL ADVERTISING is often thought of as a drab "country cousin" of its sophisticated sister in the consumer field. It is seldom as dramatic, to be sure. Sales results are usually less spectacular, and far more difficult to measure. But managers everywhere are coming to recognize that advertising can play an important role in their effort to sell industrial products.

To find out more about industrial advertising, INTERNATIONAL MANAGEMENT DIGEST went to a recognized authority. He is John C. Spurr, Director of Research for the McGraw-Hill Publishing Co. of the U.S.A., publishers of 39 business and technical periodicals.

Spurr cites five ways in which advertising works to the competitive advantage of the advertiser (IMD—Nov). Advertising reaches buying influences that are not readily available to salesmen; it increases the chances that the advertiser will be considered by the buyer; it "paves" the way for salesmen; it tells customers of other products the company makes; and it helps to keep customers sold.

These make up what Spurr calls the "role" of industrial advertising —*how* it contributes to sales, but not *how much* it contributes.

I. Setting Objectives

Spurr is painfully aware that it is extremely difficult to measure the absolute effectiveness of industrial advertising. At best, he says, research can provide only "a rough measure of the effect a campaign is creating."

Among other things, the effectiveness of advertising depends on a clear objective, proper direction to the right audience, and effective presentation. To measure effectiveness, you must know what you are trying to accomplish.

• **Objective Goal**—Spurr cites the case of a plastics manufacturer who wanted to know what users thought of his product. A survey of an appropriate magazine's readers turned up both unfavorable and favorable comments. There were 54 favorable comments on the machinability of plastics, for instance, with only four negative comments. On the other hand, 26 users remarked unfavorably about the thermal qualities of plastics, against only 15 favorable remarks.

With this information, Spurr says the manufacturer could formulate a clear advertising objective, at least for one type of audience: He should emphasize the machinability of his product, and instruct users on how and where plastics should be used to take advantage of their thermal qualities. And with such a clear objective, the manufacturer would be in a position to measure the effectiveness of his advertising.

• **Kind of Audience**—Different audiences require different advertising approaches, Spurr advises. He cites a survey conducted by a U.S. chemical company among its best customers, asking them what kind of advertising information they would prefer to read. Production men wanted case histories, photographs, and information on manufacturing technology; research people showed a keen interest in physical and chemical properties and test data; purchasing men showed a sharp desire for general product information.

II. Measuring Effectiveness

"If other sales forces remain relatively unchanged," Spurr comments with characteristic restraint, "and if there is a change in the recognition or acceptance of an advertiser's products, it is reasonable for advertising to take at least partial credit for this change."

Researchers have developed a number of techniques to measure how much credit to give advertising. The most widely-used measure is based on inquiries—the sales leads that result from an advertisement or campaign. Coded addresses and coupons are widely used to trace the origin of inquiries.

• **Sales Test**—The best test, of course, is how much sales actually results from the inquiries. An unusually thorough study was carried out by the U.S.A.'s Standard Conveyor Co., a manufacturer of ma-

Good Everywhere

PIPELINE CONSTRUCTION IN ENGLAND AND SCOTLAND is moving briskly ahead, paced by reliable, fast-digging Cleveland trenchers. The job photos reproduced here show Clevelands at work on: a 32-mile 12-inch line for the Scottish Gas Board; a 15½-mile 24-inch line for the North Thames Gas Board; a 13½-mile 16-inch line for the Southern Gas Board; a 23-mile 6 and 8-inch line for the Eastern Gas Board. A Cleveland will dig it better — anywhere.

Good Everywhere

The CLEVELAND TRENCHER Co.

20100 St. Clair Avenue • Cleveland 17, Ohio • U.S.A.

Cable Address: Trencher

terials-handling equipment. When an inquiry gave no indication of its source, the company promptly mailed a form letter requesting information on where the prospective buyer learned of the company's products. After seven years of tabulating this information, Standard Conveyor calculated that each of its advertising dollars in publications returned an average of $6.32 in direct sales; and a breakdown showed that one publication returned $13.45—more than double the average.

• **Caution**—Spurr sounds this caution: The production of inquiries is a reliable gage only if the advertising is specifically directed at producing inquiries. Readership studies often show no correlation between the highest read advertisements and the number of inquiries produced by the advertising.

As another point, Spurr reports the case of one U.S. agency, Cramer-Krassalt Co. of Milwaukee, which set out specifically to improve the production of inquiries for one of its clients. Within two years, inquiries were raised from 200 per month to over 600.

• **Indirect**—Since direct measures of sales effectiveness are rare, most techniques concentrate on such things as the recognition or acceptance of an advertiser's product, or on the effectiveness of the advertisement as an attention-getting device.

There are a number of agencies in the U.S.A. that make a business of surveying the readership of publication advertising, through mail or personal interviews. Readers are shown all or a selection of the advertising pages, and asked to point out the ones they saw and which elements of the page they read. In this way, comparisons can be made between competitive advertisers, and an estimate made of the relative effectiveness of a campaign.

The effectiveness of advertising techniques can also be appraised—such things as the style and content of headlines, illustrations, layout devices, frequency of ads, etc.

Spurr urges caution in drawing conclusions from such studies; but they do provide "proof that industrial advertising is well read."

• **Specific Tests**—Specific "recall" tests are more reliable than the broader surveys, in Spurr's opinion. For instance, an advertise-

New Clark Fork Truck attachment gives...

Accurate weighing without floor scales!

Now you can accurately weigh material *while it is being handled by your Clark fork lift trucks.* You eliminate the need for expensive floor scales . . . are able to quickly weigh material at any location in your factory, warehouse or storage yard.

This new Weighing Attachment is guaranteed to be accurate to 2/10's of 1% of rated capacity.

It is fast and simple to use. The entire device consists of only two major components. There are no springs or moving parts. Special overload stops protect the device against vertical and horizontal shock loads. And most importantly, *load positioning is not critical.* The attachment will give accurate weight regardless of where the load is placed on the forks.

For information describing this new attachment in detail, write or cable to the address below.

CLARK EQUIPMENT INTERNATIONAL, C.A.

Apartado 2717, Havana, Cuba • Cable—Clarintca, New York

CLARK® EQUIPMENT

FORK TRUCKS • TOWING TRACTORS
POWERED HAND TRUCKS • STRADDLE CARRIERS

Manufactured in Australia, Belgium, England, France, Germany, and U.S.A.

ment for porcelain insulators was sent to all subscribers of the magazine in which it appeared, with all references to the company blanked out. Almost three quarters (73%) of the subscribers said they recalled the advertisement, and 64% correctly named Ohio Brass as the advertiser.

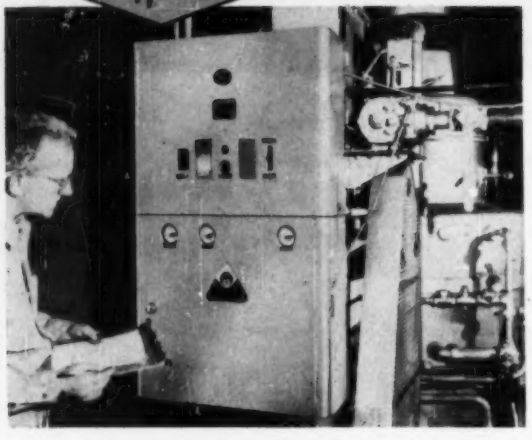
Westinghouse Electric tested one of its campaigns three times at eight-month intervals. The result: Recall increased from 27.5% to 37.1% to 57.5%.

A manufacturer of a variety of products asked the readers of a magazine: "Which of the products listed below are made by this company?" The result: The "rank order of recognition" was in direct agreement with the amount of advertising devoted to each product.

• **Skeptical Note**—As a final note, Spurr repeats his skepticism of broad studies that try to prove the power of advertising by, say, relating a company's advertising expenditures to overall sales or competitive position. There are too many factors involved, says Spurr, for these studies to prove anything beyond the undoubted fact that advertising is one of the tools used by dynamic managements. ●

LOW COST STEAM

VAPOR 19 Kgcm² (280 psi)*



IN 2 MINUTES FROM A COLD START

MODERN — SAFE — AUTOMATIC

If you require additional steam to improve your present process or for new facilities—the Vapor Steam Generator will provide the pressure and capacity you need, *when* you need it, at the touch of a button. You will save money because the Vapor generator costs less to install (occupies less than 20% of the floor area required by old, conventional designs) and costs less to operate. Delivered completely assembled, factory tested, ready to operate.

Proven – More than 15,000 in service throughout the world.
Dependable – First unit manufactured over 22 years ago still in service.

**other models to 68 Kgcm² (1000 psi)*

Brief FACTS

Eight Sizes	10 to 160 h.p.
From	300 to 5000 lbs. per hour
Pressures	2 to 1000 p.s.i.
Control	automatic, electronic outfire
Floor Area (160 h.p.)	5′ x 8′

No separate enclosure, expensive stack, or special foundation needed. Multiple-unit installations can have a single, coordinated control.

For complete information, airmail this coupon today.

VAPOR INTERNATIONAL CORP., LTD.
224 South Michigan Avenue
Chicago 4, Illinois, U.S.A.

VAPOR INTERNATIONAL CORP., LTD.
224 South Michigan Avenue Dept. M.
Chicago 4, Illinois

*Name*_____
*Title*_____
*Company*_____
*Street*_____
*City, Zone, State*_____

In Marketing

A MARKET REVOLUTION, says *Modern Plastics*, as leading makers of liquid detergents began replacing metal cans with colorful, molded plastic bottles. One U. S. company noted a 144% sales increase in test markets. Thanks to new production improvements, a 12-ounce plastic bottle is cheaper than steel, 22-ounce about the same.

BILLBOARDS FROM A CAN are a new development that could promise new techniques and greater savings for outdoor advertising. *Printers' Ink* reports how adhesive-backed poster sheets can be kept in plastic containers, then removed and applied directly with a dry roller.

NO SALESMEN? An American cap maker eliminated company and wholesale salesmen a year ago, and has done quite well without them, reports *Sales Management*. M&B Headwear Co. now relies completely on business paper advertising and direct mail to carry its sales messages, and more than 850 U. S. outlets—including major department stores—are buying by mail. Says M&B: Retailers get wider margins (up to 48%) and consumers get lower prices (by at least 20%).

TOOLS IN A TRUCK. Britain's E.M.I. Electronics placed a complete modern workshop in a 12-ton tractor/trailer, and toured Europe to promote electronic tool control systems. There is a new milling machine, with complete electronic programming equipment, and closed circuit television aboard. Says E.M.I.: "There is only one way to sell new ideas—take the products into the customer's back yard and show him how they work." (*Business Oct*, p23)

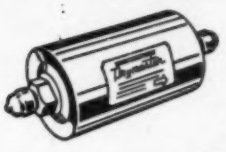
CARBONATED COFFEE is a new product of Consorcio de Cervecerias Bavaria, the aggressive, marketing-minded Colombian brewing company (IMD, May, p23). Bavaria is starting production of the drink both for sales in Colombia and for export markets.

MUELLER BRASS CO.

one dependable source for quality products for air conditioning, refrigeration, plumbing and heating

refrigeration and air conditioning

For virtually every refrigeration and air-conditioning need, Mueller Brass Co. offers high quality components, including filter-driers, strainers, valves, heat exchangers, tube and fittings, manifolds and service accessories.

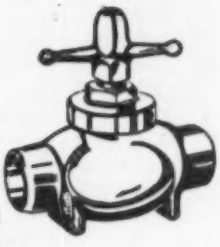


Drymaster®

Filter-Driers provide perfectly balanced filtering and drying to meet every installation need. Complete range of sizes and capacities.

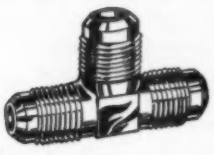
Globemaster

Packed line valves, available in straight-thru and angle types, are carefully engineered and constructed to give long, trouble-free service.



Sightmaster

Liquid indicators utilize light refraction to indicate refrigerant level. Can't leak, shock-proof mounted . . . in single or double port models with flare or solder end connections.

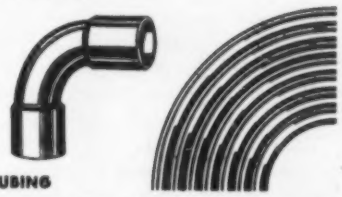


FITTINGS

Mueller Brass Co. produces a complete line of both solder-type or flare fittings in a range of sizes and styles to accommodate every type of refrigeration installation. Manufactured from seamless copper tubing, forged brass or brass rod fabricated in our own mills.

180° RETURN BENDS

A complete range of sizes for condensers, cooling coils, etc., with plain or cupped ends. Both O.D. wall thicknesses and center-to-center dimensions carefully matched to customer's specifications.

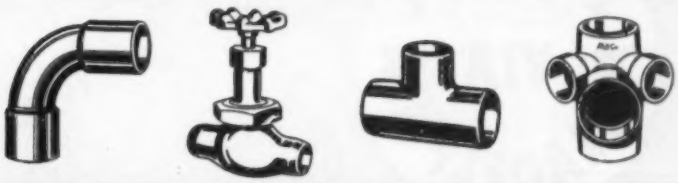


TUBING

Mueller Brass Co. Streamline dehydrated seamless soft copper tubing and hard drawn copper tubing, available in all required wall thicknesses, will fill all piping, refrigeration and air conditioning requirements.

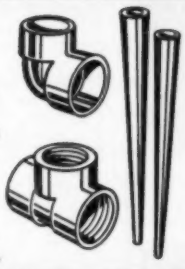
plumbing and heating products

Streamline copper tube, solder-type fittings, valves and accessories are the industry's highest quality products in design, material and workmanship. Streamline plumbing and heating products assure efficient, long-lasting installations.



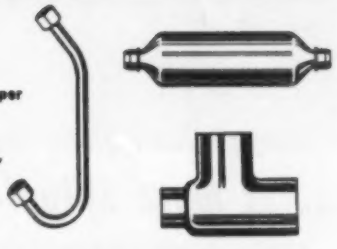
PVC pipe and fittings

Mueller Brass Co. has a complete line of Normal Impact and High Impact rigid PVC pipe and fittings manufactured from unplasticized polyvinyl chloride. Provides exceptionally long service life under severe corrosive conditions . . . ideal for chemical handling and industrial processing.



formed copper tube and assemblies

Mueller Brass Co. supplies formed copper tube and assemblies to customer's specifications. Complete facilities for swaging, bending, spinning, upsetting, flaring, flattening or sealing, beading and grooving, drilling, piercing, machining, joining . . . all at consistently close tolerances.



MUELLER BRASS CO.

Port Huron 43, Michigan, U.S.A.
Cable address: Streamline

276

GENERAL INFORMATION

For sugar and paper mills, breweries, distillers and other industrial applications, Mueller Brass Co. copper tubing is supplied to customer's specifications. Mixed groups of items can be packed for delivery to different job sites for any customer, eliminating rehandling costs.

Sales Inquiries: Handle with Care

A PRIME PURPOSE of advertising, public relations, exhibitions — all the paraphernalia of modern marketing — is to produce inquiries from prospective customers. Yet important business is often lost—sometimes forever—because an otherwise well-organized company mishandles, or doesn't handle at all, a request for information.

A few basic rules, if followed, will help a company get the most out of sales inquiries:

—**Answer every inquiry.** Whether an inquiry is important or not, it should be honored by a reply. One exception to the rule is the crank who makes it a business to write impossible letters to various concerns.

—**Answer personally.** So far as the wording is concerned, a form letter can be used. But each reply should be hand-typed and personally signed.

—**Answer promptly.** Besides the courtesy of replying to any communication, answering a sales inquiry promptly may mean the difference between winning or losing a customer.

—**Reply fully.** If, for example, an inquiry requests a certain piece of literature, be sure the right piece is sent. If the supply is depleted, say so. Promise to send it when a new supply comes in—and do not forget.

—**Watch grammar.** Letters reflect the individual and the company. Replies should be well-written and neatly typed. Misspelled words, faulty grammar, mis-use or lack of punctuation, messy erasures can lead a prospect to question the quality of the product or service involved.

—**Have a system.** Sales inquiries should be handled by one particular department or person. Anyone who can observe the rules should be entrusted with this all-important job.

If sales inquiries are not being honored by the consideration they deserve, by all means do something about it—for inquiries are the stuff of which sales are made. (*Industrial Marketing, Oct, p* 58)

TV at Point–of–Purchase

"STOREVISION"—perhaps the last word in commercial television—came to the U. S. A. last month, as one New York station began beaming daytime programs directly at the consumer in the shops. While wheeling her grocery cart through the "brand-lined aisles" of supermarkets, she will be exposed to as many as eight television screens, plus perhaps 10 satellite speakers.

According to *Sales Management* magazine, television stations in nine other cities have already been licensed to broadcast the programs.

• **Laundries, too**—In addition to supermarkets—400 have been signed up—television receivers will be set up in self-service laundries and other high-traffic locations such as store windows. Store owners will receive rent from the promoter, National Telefilm Associates.

Advertising time will conform to the industry standard of 12 minutes an hour. National Telefilm is putting a 10-second limit on each "spot"—or 72 per hour. Minimum schedule is 54 units a week: one message per hour, nine hours a day for six days. Cost is $2,180. ●

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SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION

Of McGraw-Hill International Management Digest, published monthly at Albany, New York for October 1, 1959.

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By JOHN J. COOKE, Secretary.

Sworn to and subscribed before me this 10th day of September, 1959.

[SEAL] JANET A. HARTWICK.
(My Commission expires March 30, 1961)

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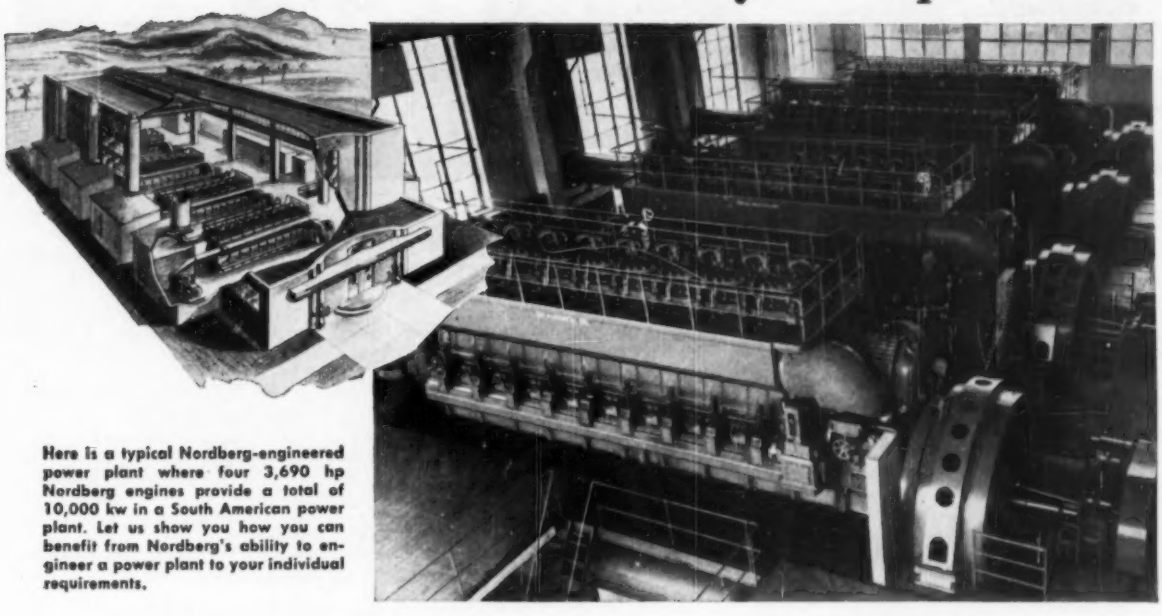
Nordberg engineers a power plant to your requirements



Here is a typical Nordberg-engineered power plant where four 3,690 hp Nordberg engines provide a total of 10,000 kw in a South American power plant. Let us show you how you can benefit from Nordberg's ability to engineer a power plant to your individual requirements.

From the early stages of planning a new diesel, natural gas or dual fuel power project to its ultimate completion is the broad area in which Nordberg's engineering ability can serve you. Nordberg offers ability and experience that has manifested itself in furnishing complete power plants from as small as 1,000 kw to the largest internal combustion power station in the world. Nordberg recommendations are sound and complete, made in the interest of providing plants of high efficiency that will supply power at the lowest possible cost. Consider the advantages of using a single source to provide recommendations and specifications for the *type and capacity of prime movers, plant layout and equipment arrangement, electrical equipment and auxiliaries*, etc. Furthermore, Nordberg will select and furnish all generating, auxiliary and accessory equipment and supervise its installation.

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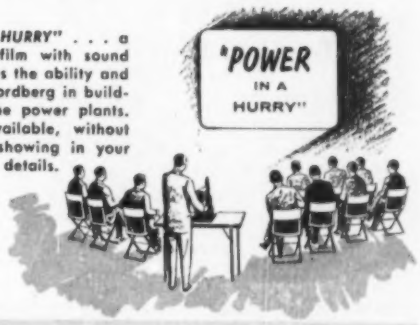
"POWER IN A HURRY" . . . a motion picture film with sound . . . demonstrates the ability and experience of Nordberg in building diesel engine power plants. This film is available, without obligation, for showing in your area. Write for details.



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Textile World
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American Business
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Architectural Record
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The Economist
The Economist Newspaper, Ltd., London, S. W. 1

Euromarket
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Harvard Business Review
Harvard University, Boston 63, Mass.

Heating, Piping & Air Conditioning
Keeney Pub. Co., Chicago 2, Ill.

Industrial Marketing
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The Management Review, Personnel, Supervisory Management
American Management Association, New York 36, N. Y.

Metal Progress
American Society for Metals, Cleveland 3, Ohio

Modern Packaging, Modern Plastics
Breskin Publications, New York 22, N. Y.

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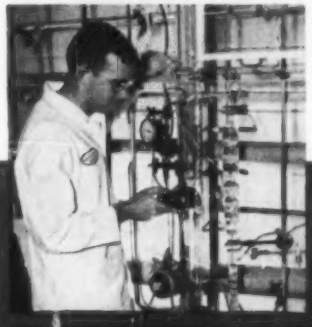

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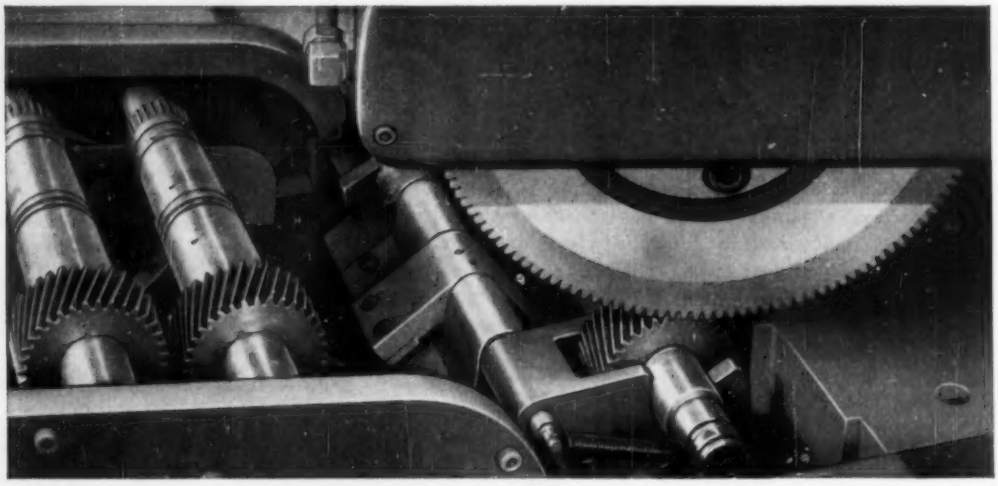


USERS

- The aircraft industry
- The automotive industry
- Computing machine manufacturers
- Motorcycle industry
- Tractor industry
- Gear manufacturers
- Electric motor (gear head) industry
- Machine tool builders

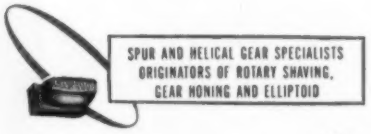
GEARS BEING HONED

- Transmission gears
- Timing gears
- Change gears
- Computor gears
- Main drive gears
- Motorcycle gears

PURPOSE OF HONING

- To remove nicks and burrs
- To improve surface finish
- To improve noisy gears
- To salvage rejects
- To quickly detect errors in prior machining
- To correct minor heat treat distortions

For complete details on Hard Gear Honing, write for Bulletin H-57-2.



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INTERNATIONAL
MANAGEMENT'S

Recommended Reading

The Latest on Latin America

Marketing In Latin America, compiled by Prof. Frank Dunbaugh, describes the experiences of U. S. corporations selling capital and consumer goods in this $50,000-million market. The book provides data on the present market, future trends, distribution and pricing, market research, advertising, and licensing. $7.50. (Printers' Ink Books, 210 Garfield Ave., New London, Conn., U.S.A.) . . . Major Latin American Construction Projects provides a complete listing of construction jobs of $1-million or over, underway or approved. 122 pages, $2.00. (Intl. Management Digest, 330 W. 42nd St., New York 36, N. Y., U.S.A.) . . . The Chase Manhattan Bank is offering its current issue of Latin American Business Highlights, featuring a special report on western hemisphere trade and the area's growing interdependence. (The Chase Manhattan Bank, Dept. of Economic Research & Publications, 18 Pine Street, New York, N. Y., U.S.A.)

A Symposium on Advertising

The Copywriter's Guide, edited by Elbrun Rochford French, discusses copywriting techniques for printed media, radio & TV, direct mail and point-of-sale advertising. 536 pages, $11.95. (Harper & Bros., 49 E. 33rd St., New York, N. Y., U.S.A.) . . . Graphis Annual 59/60, edited by Walter Hardegg, is a compendium of international advertising art. Text and notes on over 800 illustrations are in English, German, and French. 207 pages, $14.50. (Graphis Press, 45 Nuschelerstr., Zurich 1, Switzerland) . . . The Practice of Successful Advertising, was written by Loyd Coleman, an executive of the J. Walter Thompson advertising agency in Australia. International in scope, it provides information on choosing an ad agency, agency-client relations, copy, research, and public relations. 460 pages, $9.75. (James Watson & Co., 51 Melcher St., Boston 10, Mass., U.S.A.)

The Inventory Problem

Statistical Forecasting for Inventory Control, by Robert G. Brown, explains how to design an economical, efficient inventory control system through better short-range forecasting. 249 pages, $7.75. (McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y., U.S.A.)

U.S. Investments Abroad

Survey of Foreign Operations 1959-1960—by McGraw-Hill's Economics Dept.—is the first survey of how much U. S. firms plan to spend overseas on new manufacturing facilities, and where they plan to spend it. (Intl. Management Digest, 330 W. 42nd St., New York 36, N. Y., U.S.A.)

Bulletins from Industry

Two brochures, in Spanish and English, tell how Diebold safes and filing cabinets provide protection for vital documents. (Diebold Inc., Intl. Div., Canton 2, Ohio, U.S.A.) . . . Design features, applications and specifications of a new low-cost, high-precision internal grinder are given in Bulletin 2-273A-1. (The Heald Machine Co., 11 New Bond St., Worcester 6, Mass., U.S.A.)

INTERNATIONAL
MANAGEMENT'S

Personal Business

Your Visit to the U. S. — Business and Pleasure

Planning a trip to the States in 1960? The main travel agents have lots of tours up their sleeve for what they call "Visit USA" year. In some countries you can pay in advance for transport, lodging, side trips. Typically, the "packaged" cost for two visitors from Europe for a three-week coast-to-coast tour would be about $1100.

Most probably, though, you will want to combine business and pleasure, either with a group or alone. Check with a local airline or travel office about "special" tours. Alitalia, for example, has been arranging trips for Italian automotive engineers to places like Pittsburgh and Detroit, with sightseeing in New York and the Niagara Falls thrown in.

There are also the study tours run for engineers, businessmen, even trade unionists, by the U. S. government. Get in touch with a U. S. diplomatic mission about these. Private foundations like Rockefeller and Ford do much the same kind of thing.

Management or trade associations, and engineering or fraternal societies, often have close contact with comparable U. S. groups—and can help open Yankee doors to traveling business men. And there are business-cum-pleasure possibilities at 1960 U. S. trade and industrial fairs.

If you are traveling independently, be prepared to spend between $25 and $60 a day for expenses. The $25 is close to a bare minimum—and if you like the best hotels the $60 can easily stretch to $75, even $100.

Hotel rates run from $5 to $15 a day for a single room with bath; $5 to $20 for a double, excluding meals. In New York and a few other cities it can be higher. (Note: 1960 is a presidential election year. Political conventions will make Chicago and Los Angeles very crowded in July.)

Do not expect the kind of hotel service you are used to in Europe or Latin America. Most employees are willing and capable, but they won't be hanging over you with service.

Try to arrange a side-trip outside the big commercial cities. New England and Washington are easily reached from New York; a visit to rural Illinois or Wisconsin can be made from Chicago.

For public transport, allow about 5.5¢ a mile for air travel. Railroad sleeping car fares can be higher. Luxury buses are worth looking into.

Check with your auto club (or the American Automobile Club) about driving. Most drivers' licenses can be validated without charge. Car rental begins at $7 a day, plus 7¢ a mile. Some companies will let you rent a car in one city and return it to the same company in another.

Across the country you will find fine roads. In the industrial east—from New York to Chicago—fast toll turnpikes skirt the cities. There are excellent motor hotels (motels) in all parts of the country.

If you want guide books, get hold of the **American Travel Series** by Andrew Hepburn (Houghton Mifflin, New York, $1.50 each). For an intelligent and entertaining foreigner's view read **"Coast to Coast"** by James Morris (Faber & Faber, London, 21s). Transport companies also have helpful literature—such as Pan American's **"New Horizons: U. S."** And there is nothing comparable to the **Guide Michelin** for locating the best eating places.

From Detroit to the deserts of Tunisia—this Kelvinator Foodarama refrigerator has traveled some 5,700 miles. But its new owner can look forward to years of efficient, trouble-free service . . . in part, because Foodarama uses vital component parts made of sturdy, trouble-free Bundyweld Tubing!

Why refrigerators for far-off lands rely on lifelines of Bundy Tubing

THE Kelvinator Export Division of American Motors ships refrigerators all over the world. The more remote the area, the more essential is dependability. So Kelvinator, like so many other leading manufacturers, specifies lifelines of dependable Bundyweld® Tubing for its Foodarama refrigerator.

An exclusive process (below) makes Bundyweld the safety standard of refrigeration compressors and condensers, and automotive oil, fuel, brake, and hydraulic lines. FACT: *95% of today's cars use Bundyweld Tubing, in an average of 20 applications each.*

Industrial designers the world over think first of Bundy® for ultrareliable tubing and expert, specialized engineering service. New uses are found daily for Bundyweld, both in fluid transmission and purely mechanical applications. Does your tubing problem involve strength, ductility, lightness, and economy? Then it will pay you to write or cable BUNDYTUBE for information.

BUNDY TUBING COMPANY
DETROIT 14, MICHIGAN, U.S.A.

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING. AFFILIATED PLANTS IN AUSTRALIA, BRAZIL, ENGLAND, FRANCE, GERMANY, AND ITALY

WHY BUNDYWELD IS BETTER TUBING

Bundyweld starts as a single strip of copper-coated steel. Then it's . . .

continuously rolled twice around laterally into a tube of uniform thickness,

and passed through a furnace. Copper coating fuses with steel. Result . . .

Bundyweld, double-walled and brazed through 360° of wall contact.

BUNDYWELD® TUBING

DOUBLE-WALLED FROM A SINGLE STRIP

- Sizes up to ⅝" O.D.
- Leakproof
- High thermal conductivity
- High bursting point
- High endurance limit
- Extra-strong
- Ductile
- Lightweight
- Machines easily
- Takes plastic coating
- Takes plating
- Shock-resistant
- No inside bead
- Uniform I.D., O.D.

Seasons Greetings

This is a heart-warming, happy, wonderful time, a time for laughter, for joy—and for Seven-up. To our Many Friends around the World we wish a Happy Holiday Season and a Prosperous 1960.

7up

SEVEN-UP EXPORT CORPORATION 29 Broadway, New York 6, U.S.A.